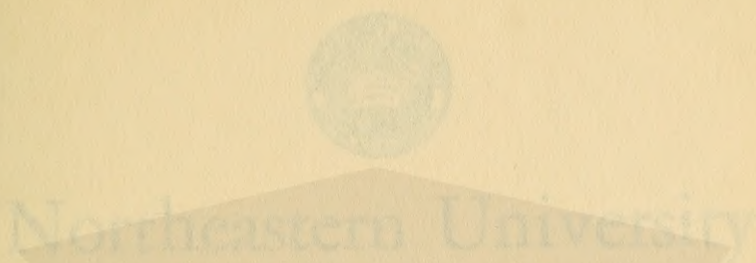


NA 375.1

U 52

Cop 3

1532



Digitized by the Internet Archive
in 2011 with funding from
Boston Library Consortium Member Libraries



Northeastern University

Catalogs of

College of Liberal Arts
College of Business Administration
College of Engineering
School of Law
School of Business
Evening Courses
of the College of Liberal Arts



Graduate Programs

College of Engineering
School of Law
School of Business



Lincoln Technical Institute
Lincoln Preparatory School

NORTHEASTERN UNIVERSITY

C O L L E G E S O F

Liberal Arts
Business Administration
Engineering

1952-1953



(COEDUCATIONAL)

BOSTON 15, MASSACHUSETTS

January, 1952

Gifts and Bequests

Northeastern University welcomes gifts and bequests for the following purposes:

- (a) For its building program.
- (b) For general endowment.
- (c) For specific purposes which may especially appeal to the donor.

It is suggested that, when possible, those contemplating gifts or bequests confer with the President of the University regarding the University's needs before legal papers are drawn.

Gifts and bequests should be made in the legal name of the University, which is "Northeastern University."



Central Quadrangle, Huntington Avenue

NORTHEASTERN UNIVERSITY

DAY COLLEGES

General Information

1952-1953



(COEDUCATIONAL)

BOSTON 15, MASSACHUSETTS
JANUARY, 1952

NORTHEASTERN UNIVERSITY

Day Colleges

COLLEGE OF LIBERAL ARTS

COLLEGE OF BUSINESS ADMINISTRATION

COLLEGE OF ENGINEERING

CONDUCTED ON THE CO-OPERATIVE PLAN

Table of Contents

	<i>Pages</i>
I. NORTHEASTERN UNIVERSITY	
1. Academic Calendar for the College Year 1952-1953.....	4
2. The University Corporation.....	5
3. Faculty and Staff.....	9
4. Northeastern University — General Statement.....	19
5. Buildings and Facilities.....	20
6. Student Activities.....	29
7. Co-operative Plan of Education.....	34
8. General Information about the Day Colleges.....	38
II. COLLEGE OF LIBERAL ARTS.....	53
III. COLLEGE OF BUSINESS ADMINISTRATION.....	81
IV. COLLEGE OF ENGINEERING.....	95
V. COURSES OF INSTRUCTION.....	111
VI. INDEX.....	191

Freshman Academic Calendar

SEPTEMBER, 1952 TO SEPTEMBER, 1953

1952

- SEPTEMBER 3 *Wednesday:* Registration and opening of college year for Division S Freshman Class (1957). Students failing to register promptly on this date will be charged a late registration fee of five dollars (\$5.00).
- OCTOBER 13 *Monday:* Celebration of Columbus Day, college exercises omitted.
- NOVEMBER 11 *Tuesday:* Armistice Day, college exercises omitted.
- NOVEMBER 12 *Wednesday:* Registration and opening of college year for Division N Freshman Class (1957). Students failing to register promptly on this date will be charged a late registration fee of five dollars (\$5.00).
- NOVEMBER 15 *Saturday:* End of first term for Division S Freshmen (1957).
- NOVEMBER 17 *Monday:* Second term begins for Division S Freshmen (1957).
- NOVEMBER 20 *Thursday:* Thanksgiving Day, college exercises omitted.
- DECEMBER 24 *Wednesday:* Classes for all students will end at 5:00 p.m. and reconvene on Monday, December 29, 1952, at 9:00 a.m.

1953

- JANUARY 1 *Thursday:* Celebration of New Year's Day, college exercises omitted.
- JANUARY 24 *Saturday:* End of second term for Division S Freshmen (1957) and end of first term for Division N Freshmen (1957).
- JANUARY 26 *Monday:* Third term begins for Division S Freshmen (1957) and second term begins for Division N Freshmen (1957).
- FEBRUARY 21 *Saturday:* Classes for all students will end at 1:00 p.m. and reconvene on Wednesday, February 25, 1953, at 9:00 a.m.
- APRIL 4 *Saturday:* End of third term and college year for Division S Freshmen (1957) and end of the second term for Division N Freshmen (1957).
- APRIL 6 *Monday:* Beginning of five-week summer term (term 4) for Division S Freshmen (1957). Summer term may be taken at this time or at the period beginning August 10, 1953. Third term begins for Division N Freshmen (1957).
- APRIL 20 *Monday:* Celebration of Patriots' Day, college exercises omitted.
- MAY 9 *Saturday:* First five-week summer term for Division S Freshmen (1957) closes.
- MAY 11 *Monday:* Beginning of summer term vacation period for Division S Freshmen (1957). (For those students who have completed term 4.)
- MAY 30 *Saturday:* Memorial Day, college exercises omitted.
- JUNE 13 *Saturday:* End of third term and college year for Division N Freshmen (1957).
- JUNE 15 *Monday:* Beginning of the first optional five-week summer term (term 4) for Division N (1957) students.
- JULY 4 *Saturday:* Independence Day, college exercises omitted.
- JULY 18 *Saturday:* Optional five-week summer term (term 4) for Division N (1957) Freshmen closes.
- JULY 20 *Monday:* Beginning of summer term vacation period for Division N Freshmen (1957) (who have completed term 4).
- AUGUST 10 *Monday:* Beginning of five-week summer term period for those students in Division S and Division N (1957) who did not attend in the first summer term periods.
- SEPTEMBER 12 *Saturday:* Second five-week summer term closes.
- SEPTEMBER 14 *Monday:* Registration and opening of college for the academic year 1953-54.

The Northeastern University Corporation

ROBERT GRAY DODGE, *Chairman*
FRANK LINCOLN RICHARDSON, *Vice-Chairman*
CARL STEPHENS ELL, *President of the University*
ROBERT GREENOUGH EMERSON, *Treasurer*
EVERETT AVERY CHURCHILL, *Secretary*

JOSEPH FLORENCE ABBOTT
CHARLES FRANCIS ADAMS
O. KELLEY ANDERSON
HENRY NATHANIEL ANDREWS
FREDERICK AYER
ARTHUR ATWOOD BALLANTINE
GEORGE LOUIS BARNES
THOMAS PRINCE BEAL
FARWELL GREGG BEMIS
SAMUEL BRUCE BLACK
JOHN S. BOTTOMLY
RICHARD L. BOWDITCH
GEORGE R. BROWN
GEORGE AUGUSTUS BURNHAM
GODFREY LOWELL CABOT
ELMER T. CARLSON
WALTER CHANNING
WILLIAM CONVERSE CHICK
ROBERT B. CHOATE
PAUL FOSTER CLARK
GEORGE HENRY CLIFFORD
ALBERT MORTON CREIGHTON
ROBERT CUTLER
MARSHALL BERTRAND DALTON
EDWARD DANA
EDWARD DANE
RALPH MEAD DARRIN
CARL PULLEN DENNETT
FREDERICK J. DILLON
DAVID FRANK EDWARDS
WILLIAM PARTRIDGE ELLISON
WALLACE FALVEY
JOHN WELLS FARLEY
JOSEPH FABIAN FORD
NOBLE FOSS
ERNEST BIGELOW FREEMAN
JOHN L. GRANDIN, JR.
MERRILL GRISWOLD
H. FREDERICK HAGEMANN, JR.
GEORGE HANSEN
CHRISTIAN A. HERTER
CHARLES E. HODGES
HAROLD DANIEL HODGKINSON
HARVEY P. HOOD
CHANDLER HOVEY
HOWARD MUNSON HUBBARD
MAYNARD HUTCHINSON
RAY E. JOHNS
CHARLES BERKLEY JOHNSON
JACOB JOSEPH KAPLAN
MICHAEL T. KELLEHER
HARRY HAMILTON KERR

EDWARD A. LARNER
JOHN E. LAWRENCE
GALEN DAVID LIGHT
RALPH LOWELL
WILLARD BLACKINTON LUTHER
EDWARD ABBOTT MACMASTER
HAROLD FRANCIS MASON
JAMES FRANKLIN MCELWAIN
HUGH DEAN MCLELLAN
EDWARD R. MITTON
IRWIN LIKELY MOORE
IRA MOSHER
IRVING EDWIN MOULTROP
GEORGE S. MUMFORD, JR.
EDWARD ABRAHAM NATHANSON
HARLAN PAGE NEWTON
JOHN T. NOONAN
GEORGE OLMSTED, JR.
AUGUSTIN HAMILTON PARKER, JR.
THEODORE ROOSEVELT PEARY
EDWARD DANA PHINNEY
FREDERICK SANFORD PRATT
ROGER PRESTON
STUART CRAIG RAND
WILLIAM MCNEAR RAND
NEAL RANTOUL
JAMES LORIN RICHARDS
JAMES C. RICHDALE
HAROLD BOURS RICHMOND
CHARLES FOREST RITTENHOUSE
LEVERETT SALTONSTALL
RUSSELL MARYLAND SANDERS
RALPH T. SAYLES
ANDREW SEBASTIAN SEILER
GIFFORD K. SIMONDS, JR.
JOSEPH P. SPANG, JR.
FRANK PALMER SPEARE
F. R. CARNEGIE STEELE
CHARLES STETSON
ABBOT STEVENS
EARL PLACE STEVENSON
ROBERT GREGG STONE
ROBERT T. P. STORER
FRANK HORACE STUART
RALPH EMERSON THOMPSON
ELIOT WADSWORTH
SAMUEL WAKEMAN
EUSTIS WALCOTT
HAROLD JOHN WALTER
EDWIN S. WEBSTER, JR.
EDWARD A. WEEKS, JR.
SINCLAIR WEEKS

General University Committees

Executive Council

CARL STEPHENS ELL, *Chairman*

EVERETT AVERY CHURCHILL
ALBERT ELLSWORTH EVERETT

MILTON JOHN SCHLAGENHAUF
WILLIAM CROMBIE WHITE

University Cabinet

CARL STEPHENS ELL, *Chairman*

WILLIAM THURLOW ALEXANDER
EVERETT AVERY CHURCHILL
ALBERT ELLSWORTH EVERETT
GEORGE RAYMOND FENNELL
ROGER STANTON HAMILTON
CHARLES WILLIAM HAVICE
FREDERICK ROBERT HENDERSON
WILFRED STANLEY LAKE
DONALD HERSHEY MACKENZIE

GEORGE ARTHUR MALLION
HAROLD WESLEY MELVIN
RUDOLPH MAGNUS MORRIS
LOWELL STARBUCK NICHOLSON
WINTHROP ELIOT NIGHTINGALE
RUDOLPH OSCAR OBERG
EDWARD SNOW PARSONS
MILTON JOHN SCHLAGENHAUF
J. KENNETH STEVENSON

WILLIAM CROMBIE WHITE

Library Committee

EVERETT AVERY CHURCHILL, *Chairman*

WILLIAM THURLOW ALEXANDER
ALBERT ELLSWORTH EVERETT
ROGER STANTON HAMILTON

WILFRED STANLEY LAKE
HAROLD WESLEY MELVIN
MYRA WHITE

WILLIAM CROMBIE WHITE

Advisory Committee on Faculty Policy

EVERETT AVERY CHURCHILL, *Chairman*

ELMER HENRY CUTTS
ROGER STANTON HAMILTON
JOHN CHRISTIE MORGAN

ARTHUR ANDREW VERNON
WILLIAM CROMBIE WHITE
JOSEPH WILLIAM ZELLER

Day College Committees

General

WILLIAM CROMBIE WHITE, *Chairman*

WILLIAM THURLOW ALEXANDER
GEORGE RAYMOND FENNELL
ROGER STANTON HAMILTON
FREDERICK ROBERT HENDERSON
WILFRED STANLEY LAKE

HAROLD WESLEY MELVIN
RUDOLPH MAGNUS MORRIS
WINTHROP ELIOT NIGHTINGALE
EDWARD SNOW PARSONS
MILTON JOHN SCHLAGENHAUF

Executive

HAROLD WESLEY MELVIN, *Chairman*

WILLIAM THURLOW ALEXANDER
ROGER STANTON HAMILTON
MYRA LAMETTA HERRICK

WILFRED STANLEY LAKE
RUDOLPH MAGNUS MORRIS
WINTHROP ELIOT NIGHTINGALE
EDWARD SNOW PARSONS

Day College Council

WILLIAM CROMBIE WHITE, *Chairman*
GEORGE RAYMOND FENNELL, *Secretary*

WILLIAM THURLOW ALEXANDER
CHESTER PACKARD BAKER
HERBERT KAPPEL BROWN
ROBERT BRUCE
ELMER HENRY CUTTS
CHARLES HENRY DUFTON
ALFRED JOHN FERRETTI
PAUL WILLIAM GLENNON
EMIL ANTON GRAMSTORFF
WARREN SAWYER HALLAMORE
ROGER STANTON HAMILTON
CHARLES WILLIAM HAVICE
FREDERICK ROBERT HENDERSON
FREDERICK WILLIAM HOLMES
LYMAN ALBERT KEITH
REGINALD GAGE LACOUNT

WILFRED STANLEY LAKE
GILBERT GEORGE MACDONALD
HAROLD WESLEY MELVIN
GEORGE HARRIS MESERVE, JR.
ANTONIO LIBERO MEZZACAPPA
RUDOLPH MAGNUS MORRIS
WINTHROP ELIOT NIGHTINGALE
EDWARD SNOW PARSONS
ROLAND GUYER PORTER
NORMAN ALEXANDER PREBLE
HOWARD EDWARD PRICE
MILTON JOHN SCHLAGENHAUF
JOSEPH SPEAR
ELIOT FRANKLIN TOZER
ARTHUR ANDREW VERNON
ARTHUR BERTRAND WARREN
MYRA E. WHITE

Student Activities

EDWARD SNOW PARSONS, *Chairman*

EVERETT CARTER MARSTON
MYRA LAMETTA HERRICK

JOSEPH SPEAR
WILMOT DICKINSON GRIFFITH
ROBERT JOHN WEAVER

Committee on Freshman Affairs

GILBERT GEORGE MACDONALD, *Chairman*

LOUIS COOPERSTEIN
FRANKLIN NORVISH

GUSTAV ROOK
ROBERT JOHN WEAVER

Officers of the Day Colleges

- | | |
|---|--|
| <p>CARL STEPHENS ELL, A.B., M.S., Ed.M., Sc.D., LL.D.
Office 184 Richards Hall</p> | <p><i>President of the University</i>
Res. 21 Beaumont Ave., Newtonville</p> |
| <p>FRANK PALMER SPEARE, M.H., LL.D.</p> | <p><i>President Emeritus of the University</i>
Res. 280 Beacon St., Boston</p> |
| <p>EVERETT AVERY CHURCHILL, A.B., Ed.D.
Office 138 Richards Hall</p> | <p><i>Vice-President of the University</i>
Res. 32 Fernald Dr., Cambridge</p> |
| <p>WILLIAM CROMBIE WHITE, S.B., Ed.M.
Office 152 Richards Hall</p> | <p><i>Director of Day Colleges</i>
Res. 30 Summit Rd., Wellesley</p> |
| <p>MILTON JOHN SCHLAGENHAUF, A.B., B.D., M.A.
Office 139 Richards Hall</p> | <p><i>Director of Public Relations and University Admissions</i>
Res. 96 Blakely Rd., Medford
Telephone: MYstic 6-6148</p> |
| <p>WARREN SAWYER HALLAMORE, A.B.
Office 150 Richards Hall</p> | <p><i>Day College Director of Admissions</i>
Res. 18 Chestnut St., Boston</p> |
| <p>WILLIAM THURLOW ALEXANDER, S.B., M.A.
Office 154 Richards Hall</p> | <p><i>Dean of the College of Engineering</i>
Res. 14 Nelson Rd., Melrose</p> |
| <p>ROGER STANTON HAMILTON, A.B., M.A., Ph.D.
Office 155 Richards Hall</p> | <p><i>Dean of the College of Business Administration</i>
Res. 40 Bound Brook Rd., Newton Highlands</p> |
| <p>WILFRED STANLEY LAKE, A.B., M.A., Ph.D.
Office 155 Richards Hall</p> | <p><i>Dean of the College of Liberal Arts</i>
Res. 59 Hinckley Rd., Waban</p> |
| <p>GEORGE RAYMOND FENNELL, S.B., M.B.A.
Office 152 Richards Hall</p> | <p><i>Secretary of the Faculty</i>
Res. 42 Fremont Ave., Everett</p> |
| <p>CHARLES WILLIAM HAVICE, A.B., M.A., S.T.B., Ph.D., D.D.
Office 352 Richards Hall</p> | <p><i>Dean of Chapel</i>
Res. 178 Goden St., Belmont</p> |
| <p>FREDERICK ROBERT HENDERSON, S.B., M.S.
Office 250 Richards Hall</p> | <p><i>Director Veterans and Students Accounts Office</i>
Res. 51 Beverly Rd., Wellesley</p> |
| <p>HAROLD WESLEY MELVIN, A.B., M.A.
Office 275 Richards Hall</p> | <p><i>Dean of Students</i>
Res. 44 Houston Ave., Milton</p> |
| <p>GILBERT GEORGE MACDONALD, B.I.E., Ed.M.
Office 275 Richards Hall</p> | <p><i>Dean of Freshmen</i>
Res. 20 Beaufort Ave., Needham</p> |
| <p>MYRA LAMETTA HERRICK, A.B., M.A.
Office 275 Richards Hall</p> | <p><i>Assistant Dean of Women</i>
Res. 5 Echo Ave., Beverly</p> |
| <p>RUDOLPH MAGNUS MORRIS, S.B., Ed.M.
Office 254 Richards Hall</p> | <p><i>Registrar</i>
Res. 99 Knollwood Rd., Squantum</p> |
| <p>WINTHROP ELIOT NIGHTINGALE, A.B., S.B., Ed.M.
Office 253 Richards Hall</p> | <p><i>Director of Co-operative Work</i>
Res. 136 Dickerman Rd., Newton Highlands</p> |
| <p>EDWARD SNOW PARSONS, S.B., Ed.M.
Office 104 Student Center Building</p> | <p><i>Director of Student Activities</i>
Res. 16 Hardy Ave., Watertown</p> |
| <p>HERBERT KAPFEL BROWN, A.B., M.A., Ph.D.
Office 154 Richards Hall</p> | <p><i>Director of Engineering Graduate Study</i>
Res. 87 Harvard Ave., Brookline</p> |
| <p>ARTHUR ANDREW VERNON, S.B., M.S., Ph.D.
Office 425 Richards Hall</p> | <p><i>Director of Graduate Study in the College of Liberal Arts</i>
Res. 14 Standish St., Newton Highlands</p> |

Administrative and Instructional Staff

- WILLIAM THURLOW ALEXANDER, S.B., M.A.
Professor of Industrial Engineering and Chairman of the Department
 Office 154 Richards Hall
 Res. 14 Nelson Rd., Melrose
- ISRAEL ALUF, A.B., M.A.
Instructor in Modern Languages
 Office 452 East Building
 Res. 448 Park Dr., Boston
- Sgt. CHARLES CLYDE ARGABRIGHT
Instructor in Military Science and Tactics
 Office 203 Greenleaf Building
 Res. 85 Lilac St., Pawtucket, R. I.
- FRANCES ATWOOD, S.B.
Assistant Librarian
 Office Library
 Res. 590 Main St., Waltham
- CHARLES OSCAR BAIRD, JR., S.B., M.S.
Professor of Civil Engineering
 Office 101 Botolph Building
 Res. 17 Manning Rd., E. Lynn
- HOLLIS SEMPLE BAIRD
Instructor in Physics
 Office 246 Richards Hall
 Res. 221 Wilson Ave., Quincy
- CHESTER PACKARD BAKER, S.B., M.A.
Professor of Chemical Engineering and Chairman of the Department
 Office 1 Science Hall
 Res. 31 Bow Rd., Newton Centre
- JAMES THOMAS BARRS, A.B., M.A., Ph.D.
Assistant Professor of English
 Office 453 East Building
 Res. 166 Chestnut St., W. Newton
- LINCOLN CARR BATESON, B.B.A.
Instructor in Accounting
 Office 103 Science Hall
 Res. 23 Essex Rd., Sharon
- WALLACE PUTNAM BISHOP, A.B., M.A.
Instructor in English and History
 Office 352 East Building
 Res. Broadmeadow Rd., Groton
- EUGENE JOSEPH BLACKMAN, S.B., M.A.
Assistant Professor of English
 Office 463 East Building
 Res. 53 Stratton St., Dorchester
- RALPH SUMNER BLANCHARD, JR., S.B.
Instructor in Mechanical Engineering
 Office 102 Greenleaf Building
 Res. 75 Lincoln St., Waltham
- RAYMOND EARL BLOIS, S.B., M.A., Ph.D.
Assistant Professor of English
 Office 453 East Building
 Res. 128 Hemenway St., Boston
- FLETCHER SCHOFIELD BOIG, S.B., M.S., Ed.M.
Assistant Professor of Chemistry
 Office 425 Richards Hall
 Res. 78 Hamilton Ave., N. Quincy
- Sgt. FREDERIC SCOTT BONNEY
Instructor in Military Science and Tactics
 Office 203 Greenleaf Building
 Res. 59 Eleanor St., Chelsea
- WILLIAM NETTLETON BOURNE, A.B., M.A.
Assistant Professor of Economics
 Office 108 Science Hall
 Res. 34 Buckingham St., Cambridge
- BOIT LINCOLN BRANNEN, S.B., Ed.M.
Assistant Professor of Psychology
 Office 354 Richards Hall
 Res. 62 Cottage St., Melrose
- CAPTAIN LESLIE CLARENCE BREWER, S.B.
Assistant Professor of Military Science and Tactics
 Office 203 Greenleaf Building
 Res. 17 Wallace St., Newton Highlands
- WILLIAM SPENCER BRONSON, B.A., M.A.
Instructor in Psychology
 Office 354 Richards Hall
 Res. 378 Broadway, Cambridge
- HERBERT KAPPEL BROWN, A.B., M.A., Ph.D.
Associate Professor of Mechanical Engineering and Director of Engineering Graduate Study
 Office 154 Richards Hall
 Res. 87 Harvard Ave., Brookline
- ROBERT BRUCE, B.C.S., M.C.S.
Professor of Accounting
 Office 103 Science Hall
 Res. 12 Elliott St., Winthrop
- REGINALD LAWRENCE CAPON, S.B., M.A.
Assistant Professor of English
 Office 453 East Building
 Res. 17 Duffield Rd., Auburndale
- MARCELLO JOHN CARRABES, S.B.
Instructor in Mathematics
 Office 325 Richards Hall
 Res. 31 Clark St., Everett
- THOMAS JAMES CAVANAGH, A.B.
Instructor in Secretarial Studies
 Office 100 Science Hall
 Res. 451 Main St., Waltham

- SAVERIO CERULLO, S.B., M.B.A.
Office 108 Science Building
Assistant Professor of Finance
Res. 26 Brewster Rd., Medford
- SZE-HOU CHANG, S.B., Ph.D.
Office Greenleaf Building
Research Professor of Communications
Res. 77 Dustin St., Brighton
- CAPTAIN WILLIAM HOUSE CHESTNUT, S.B.
Office 203 Greenleaf Building
Assistant Professor of Military Science and Tactics
Res. 53 Orchard St., Jamaica Plain
- LAURENCE FULLER CLEVELAND, S.B., M.S.
Office 13 Botolph Building
Associate Professor of Electrical Engineering
Res. 24 Fairfield St., Newtonville
- WILLIAM THOMAS CLONEY, JR., A.B.
Office 411 Student Center Building
Associate Professor of English and Journalism
Res. 30 Lantern Lane, Milton
- EDWARD MARKS COOK, A.B., M.A.
Office 325 Richards Hall
Assistant Professor of Mathematics
Res. 611 Greendale Ave., Needham
- JOSEPH ARTHUR COOLIDGE, S.B., M.A.
Office 246 Richards Hall
Professor of Physics
Res. 20 Martin St., Cambridge
- QUENTIN LEROY COONS, A.B., M.B.A.
Office 108 Science Hall
Assistant Professor of Advertising
Res. 30 Holden St., Cambridge
- LOUIS COOPERSTEIN, A.B., M.A.
Office 452 East Building
Associate Professor of Modern Languages
Res. 44 Whitney Rd., Newtonville
- LYOYD RIDGEWAY CROWTHER, B.S.
Office 101 Botolph Building
Instructor in Civil Engineering
Res. 1006 Liberty St., Braintree
- OTIS FRENCH CUSHMAN, S.B., M.S.
Office 451 Richards Hall
Associate Professor of Drawing
Res. 77 High St., Hampton, N. H.
- ELMER HENRY CUTTS, A.B., M.A., Ph.D.
Professor of History and Government and Chairman of the Department
Office 352 East Building
Res. 387 Harvard St., Cambridge
- BLANCHE BRINE DALY, A.B., M.Sc., M.A., Ph.D.
Office 424 Science Hall
Assistant Professor of Biology
Res. 40 Larch Rd., Cambridge
- ROLAND RICE DARLING
Office 252 Richards Hall
Assistant in Public Relations
Res. 128 Chestnut St., Boston
- WARREN CLIFTON DEAN, A.B., M.A.
Office 325 Richards Hall
Assistant Professor of Mathematics
Res. 213 Jackson St., Newton Centre
- JOHN JAMES DEVINE, S.B., M.Sc.
Office 451 Richards Hall
Associate Professor of Drawing
Res. 210 Payson Rd., Belmont
- JOHN FRANKLIN DEVITT
Office 275 Richards Hall
Head Proctor
Res. 25 Delia Walker Ave., S. Weymouth
- RICHARD GILBERT DOMEY, S.B., Ed.M.
Office 354 Richards Hall
Assistant Professor of Psychology
Res. 84A Ellery St., Cambridge
- CHARLES HENRY DUFTON, A.B., M.A.
Associate Professor of Marketing and Advertising and Chairman of the Department
Office 108 Science Hall
Res. 33 Canterbury St., Andover
- EUGENE LAWRENCE DURHAM, A.B., M.A.
Office 253 Richards Hall
Instructor in Co-ordination
Res. 1167 Boylston St., Boston
- ELIOT DUVEY, S.B.
Office 104 Student Center Building
Coach of Dramatics
Res. 23 Hancock St., Boston
- MARTIN WHITE ESSIGMANN, S.B., M.S.
Associate Professor of Electrical Engineering and Co-ordinator of Electronics Research
Office Greenleaf Building
Res. 10 Roland St., W. Medford
- DAISY MILNE EVERETT
Office 116 Richards Hall
Bursar
Res. 1111 Highland Ave., Needham Heights
- EDMUND WINTHROP FENN, A.B., A.M.
Office 363 East Building
Assistant Professor of History and Government
Res. 279 Clifton St., Malden
- GEORGE RAYMOND FENNELL, S.B., M.B.A.
Secretary of the Faculty and Associate Professor of Economics
Office 152 Richards Hall
Res. 42 Fremont Ave., Everett

ALFRED JOHN FERRETTI, S.B., M.S.

Professor of Mechanical Engineering and Chairman of the Department
Office 75 Richards Hall Res. 29 Coolidge Rd., Lynn

CHARLES FRANCIS FIELD, S.B.

Office 253 Richards Hall *Instructor in Co-ordination*
Res. 109 Queensberry St., Boston

MARY B. FOOR

Office 41 Richards Hall *Manager of Bookstore*
Res. 52 Milton Rd., Brookline

GEORGE SHANNON FORBES, A.B., M.A., Ph.D.

Office 425 Richards Hall *Professor of Chemistry*
Res. 8½ Ash Street Pl., Cambridge

ARTHUR ROWE FOSTER, S.B., M. Eng.

Office 75 Richards Hall *Instructor in Mechanical Engineering*
Res. 26 Strathmore Cir., Braintree

HERBERT WENDELL GALLAGHER, S.B.

Associate Professor of Physical Education and Coach of Baseball and Hockey
Office 104 Student Center Building Res. 449 Lexington St., Waltham

PRISCILLA COOK GIBSON, S.B.

Office 104 Student Center Building *Instructor in Physical Education*
Res. 19 Fairfax St., W. Newton

R. EUGENE GILMORE, A.B., M.A., S.T.B., Th.D.

Office 352 Richards Hall *Lecturer in Philosophy and Sociology*
Res. 224 Dana Ave., Hyde Park

SAMUEL MERRITT GIVEEN, A.B., M.A.

Office 325 Richards Hall *Instructor in Mathematics*
Res. 35 Fayette St., Watertown

PAUL WILLIAM GLENNON, B.B.A., LL.B., M.B.A., LL.M., J.S.D.

Professor of Law and Accounting and Chairman of the Department
Office 103 Science Hall Res. 31 Bellingham Rd., Worcester

ROBERT GOLD, B.S., M.S.

Office 325 Richards Hall *Instructor in Mathematics*
Res. 146 Nichols St., Everett

JOSEPH MANUEL GOLEMME, S.B., M.A.

Office 103 Science Hall *Associate Professor of Accounting*
Res. 23 Blossom St., Rockland

EMIL ANTON GRAMSTORFF, S.B., M.S.

Professor of Civil Engineering and Chairman of the Department
Office 101 Botolph Building Res. 19 Hilltop Ave., Lexington

SIDNEY ALLEN GREENBERG, B.S.

Office Greenleaf Building *Electronics Research Assistant*
Res. 129 Hutchings St., Roxbury

WILMOT DICKINSON GRIFFITH, A.B., M.A.

Office 104 Student Center Building *Assistant Professor of Psychology*
Res. 56 Circuit Ave., Newton Highlands

CARLO EDWARD GUBELLINI, S.B., M.B.A.

Office 108 Science Hall *Assistant Professor of Business Management*
Res. 369 Boston Ave., Medford

ROGER STANTON HAMILTON, A.B., M.A., Ph.D.

Office 155 Richards Hall *Dean, College of Business Administration,*
Professor of Economics and Chairman of the Department
Res. 40 Bound Brook Rd., Newton Highlands

GEORGE WILLIAM HANKINSON, A.B., S.B., M.S.

Office 101 Botolph Building *Assistant Professor of Civil Engineering*
Res. 111 Winsor Ave., Watertown

WILLIAM SYDNEY HANNA, LL.B.

Office 252 Richards Hall *Assistant Professor of Co-ordination*
Res. 121 Allston St., W. Medford

LIEUTENANT COLONEL AMMON NOAH HARTMAN, S.B.

Office 203 Greenleaf Building *Assistant Professor of Military Science and Tactics*
Res. Lakehurst Ave., Weymouth

CHARLES WILLIAM HAVICE, A.B., M.A., S.T.B., Ph.D., D.D.

Office 352 Richards Hall *Dean of Chapel and Professor of Sociology and Chairman of the Department*
Res. 178 Goden St., Belmont

SAMUEL LeROY HENSEL, JR., S.B., M.S., D.Sc.

Office 1 Science Hall *Assistant Professor of Chemical Engineering*
Res. 172 Beech St., Belmont

MYRA LAMETTA HERRICK, A.B., M.A.

Office 275 Richards Hall *Assistant Dean of Women and Instructor in English*
Res. 5 Echo Ave., Beverly

WHEATON ARNOLD HOLDEN, A.B., M.A.

Office 357 Richards Hall *Instructor in History and Art*
Res. 150 Concord St., Newton Lower Falls

- FREDERICK WILLIAM HOLMES, A.B., M.A.
Professor of English and Chairman of the Department
 Office 453 East Building Res. 43 Lincoln St., Dedham
- MAJOR HERBERT HENRY HOWARD, S.B. *Assistant Professor of Military Science and Tactics*
 Office 203 Greenleaf Building Res. 42 Faxon Rd., Stoughton
- DAVID MOORE HOWELL, B.S., M.S., Ph.D. *Instructor in Chemistry*
 Office 425 Richards Hall Res. 381 High Rock St., Needham
- STANLEY PARKER HULL, A.B., M.A. *Instructor in Sociology*
 Office 352 Richards Hall Res. 196 Bay State Rd., Boston
- CARL DAVID JOHNSON, A.B., M.A. *Associate Professor of Physics*
 Office 103 Greenleaf Building Res. 238 Hemenway St., Boston
- LAWRENCE GAYLORD JONES, A.B., A.M. *Electronics Research Associate*
 Office Greenleaf Building Res. 55 Langdon St., Cambridge
- MURL TUCKER KEISER, A.B., M.A. *Instructor in English*
 Office 453 East Building Res. 128 Hemenway St., Boston
- LYMAN ALBERT KEITH, S.B., M.A., M.B.A. *Associate Professor of Business Management*
 Office 108 Science Hall Res. 918 Beacon St., Boston
- CHRISTOPHER FRANCIS KENNEDY, A.B., Ed.M. *Assistant Professor of Mathematics*
 Office 325 Richards Hall Res. 9 Glen St., Dorchester
- GEORGE KHIRALLA, S.B., M.A. *Assistant Professor of English*
 Office 463 East Building Res. 32 Orvis Rd., Arlington
- CHARLES ERNEST KITCHIN, A.B., M.A. *Adviser to the Student Union, Assistant Professor of Modern Languages*
 Office 205 Student Center Building Res. 24 Morton St., Wellesley
- JOHN JOSEPH KLEIN, S.B. *Instructor in Electrical Engineering*
 Office 104 Botolph Building Res. 16 Magazine St., Roxbury
- REGINALD GAGE LACOUNT, S.B., M.A., Ph.D. *Professor of Physics and Chairman of the Department*
 Office 245 Richards Hall Res. 11 Cleveland Rd., Wellesley
- WILFRED STANLEY LAKE, A.B., M.A., Ph.D. *Dean, College of Liberal Arts and Professor of Economics*
 Office 155 Richards Hall Res. 59 Hinckley Rd., Waban
- LEONARD LANDALL, S.B. *Assistant Professor of Co-ordination*
 Office 253 Richards Hall Res. 23 Emerson Pl., Needham
- GEORGE MARTIN LANE, M.D. *Associate Professor of Hygiene, College Physician*
 Office 311 Commonwealth Avenue Res. 21 Alton Court, Brookline
- ROBERT EDWARD LANG, S.B. *Assistant Director Veterans and Student Accounts Office*
 Office 249 Richards Hall Res. 11 Oakland St., Natick
- NATHAN LEVENSON, LL.B. *Press Representative*
 Office 151 Richards Hall Res. 5 Nazing Court, Roxbury
- WALTER HANS LOB, S.B., M.S. *Electronics Research Associate*
 Office Greenleaf Building Res. 4 Arrow St., Cambridge
- WILLIAM FAY LUDER, A.B., Ph.D. *Professor of Chemistry*
 Office 425 Richards Hall Res. 112 Wetherbee Rd., Waltham
- GILBERT GEORGE MACDONALD, B.I.E., M.Ed. *Dean of Freshmen and Assistant Professor of Education*
 Office 275 Richards Hall Res. 20 Beaufort Ave., Needham
- CAPTAIN JOHN MULCARE MAHONEY, A.B. *Assistant Professor of Military Science and Tactics*
 Office 203 Greenleaf Building Res. 17 Greylock Rd., Allston
- LAWRENCE HOWARD MALCHMAN, S.B., Ed.M., C.P.A. *Assistant Professor of Accounting*
 Office 103 Science Hall Res. 24 John St., Brookline
- SERGEANT STANISLAW MALKO *Instructor in Military Science and Tactics*
 Office 203 Greenleaf Building Res. 15 Dunlap St., Salem
- ALFRED GEORGE MARCOTTE, S.B. *Instructor in Electrical Engineering*
 Office 104 Botolph Building Res. 6 Ripley St., N. Chelmsford

- EVERETT CARTER MARSTON, A.B., M.A.
Office 308 Student Center Building
Professor of English
Res. Crescent St., S. Duxbury
- NORMAN SMART MCALLISTER, A.B., Ed.M.
Office 325 Richards Hall
Assistant Professor of Mathematics
Res. 70 Millwood St., Framingham
- RICHARD WARD MCCARTHY, A.B.
Office 254 Richards Hall
Assistant to the Registrar
Res. 68 Margin St., W. Newton
- EDWARD LAURENCE MCCORMACK, S.B.
Office 103 Science Hall
Co-ordinator of Co-operative Work
Res. 101 Scituate St., Arlington
- WALDEMAR STANWOOD MCGUIRE, S.B., M.A.
Office 425 Richards Hall
Associate Professor of Chemistry
Res. 33 Samoset Ave., Quincy
- HAROLD WESLEY MELVIN, A.B., M.A.
Office 275 Richards Hall
Dean of Students and Professor of English
Res. 44 Houston Ave., Milton
- GEORGE HARRIS MESERVE, JR., S.B., Ed.M.
Office 357 Richards Hall
Professor of History and Art
Res. 64 Magoun Ave., Medford
- ANTONIO LIBERTO MEZZACAPPA, A.B., M.A., Ph.D.
Office 452 East Building
Professor of Modern Languages and Chairman of the Department
Res. 100 Wildwood St., Winchester
- ERNEST ELFORD MILLS, S.B.
Office 75 Richards Hall
Instructor in Mechanical Engineering
Res. Prospect St., Sherborn
- PRUDIE RAE MOORE, S.B., M.A.
Office 150 Richards Hall
Assistant Director of Admissions
Res. 109 St. Stephen St., Boston
- JOHN CHRISTIE MORGAN, S.B., M.B.A.
Office 1 Science Hall
Associate Professor of Chemical Engineering
Res. 24 Walker St., Newtonville
- RUDOLPH MAGNUS MORRIS, S.B., Ed.M.
Office 254 Richards Hall
Registrar and Professor of Education
Res. 99 Knollwood Rd., Squantum
- Pfc. JOHN JOSEPH MORRISSEY
Office 203 Greenleaf Building
Instructor in Military Science and Tactics
Res. Shirley
- A. HOWARD MYERS, A.B., M.A., Ph.D.
On leave of absence to serve as Director, Wage Stabilization Board, Region I.
Associate Professor of Industrial Relations
Res. 64 Garland Rd., Newton Centre
- WINTHROP ELIOT NIGHTINGALE, A.B., S.B., Ed.M.
Director of Co-operative Work and Professor of Co-ordination and Chairman of the Department
Office 253 Richards Hall
Res. 136 Dickerman Rd., Newton Highlands
- CHARLES WILLIAM NIXON, B.S., M.S., Ph.D.
Office 424 Science Hall
Assistant Professor of Biology
Res. 316 Huntington Ave., Boston
- FRANKLIN NORVISH, S.B., M.A.
Office 453 East Building
Associate Professor of English
Res. 22 Byrd Ave., W. Newton
- RUDOLF OSCAR OBERG, S.B., Ed.M.
Office 251 Richards Hall
Director of Alumni Relations
Res. 37 Walker St., Atlantic
- M. Sgt. JOHN JOSEPH O'CONNOR
Office 203 Greenleaf Building
Instructor in Military Science and Tactics
Res. 101 Comstock Ave., Providence, R. I.
- Sfc. JOHN EDWARD O'RILEY
Office 203 Greenleaf Building
Instructor in Military Science and Tactics
Res. 93 Parker St., Islington
- THOMAS JOSEPH OWENS, A.B.
Office 325 Richards Hall
Instructor in Mathematics
Res. 56 Babcock Ave., N. Weymouth
- GEORGE PALKEN, S.B.
Office 102 Greenleaf Building
Assistant Professor of Industrial Engineering
Res. 35 Floyd St., Dorchester
- EDWARD SNOW PARSONS, S.B., Ed.M.
Office 104 Student Center Building
Director of Student Activities and Professor of Physical Education
Res. 16 Hardy Ave., Watertown
- BENJAMIN MAX PERLES, S.B., M.B.A.
Office 100 Science Hall
Instructor in Economics
Res. 38 Everett St., Newton Centre
- GEORGE EVERETT PIHL, S.B., M.S.
Office 11 Botolph Building
Associate Professor of Electrical Engineering
Res. 40 Bournedale Rd., Jamaica Plain

ROLAND GUYER PORTER, B.E.E., M.S.

Professor of Electrical Engineering and Chairman of the Department
Office 12 Botolph Building Res. 19 Woodbury St., Beverly

NORMAN ALEXANDER PREBLE, A.B., M.Sc., Ph.D.

Associate Professor of Biology and Chairman of the Department
Office 424 Science Hall Res. Maple Dell Lane, Holliston

COLONEL HOWARD EDWARD PRICE, S.B.

Professor of Military Science and Tactics
Office 203 Greenleaf Building Res. 88 Spruce St., Watertown

Sgt. THOMAS EDWARD RALPH

Instructor in Military Science and Tactics
Office 203 Greenleaf Building Res. P.O. Box 478, Shirley

JACK DARREL RAYMOND, S.B., Ed.M.

Assistant Professor of Co-ordination
Office 253 Richards Hall Res. Main St., Marshfield Hills

WILLIAM HOOPER REYNOLDS, S.B., M.A.

Assistant Professor of English
Office 463 East Building Res. 52 Prospect St., Marblehead

HENRY EDWARD RICHARDS, S.B., M.S.

Associate Professor of Electrical Engineering
Office 14 Botolph Building Res. 171 First St., Melrose

DANIEL JOSEPH ROBERTS, S.B., M.B.A.

Assistant Professor of Business Management
Office 104 Student Center Building Res. 53 Fiske Ave., Waltham

JOHN SPENCER ROCHEFORT, S.B.

Electronics Research Associate
Office Greenleaf Building Res. 82 Fairmount St., Dorchester

GUSTAV ROOK, S.B.

Assistant Professor of Drawing
Office 451 Richards Hall Res. 67 Lonsdale St., Dorchester

KENNETH GILMORE RYDER, A.B., M.A.

Instructor in History and Government
Office 352 East Building Res. 30 Bowker St., Lexington

ALBERT EDWARD SANDERSON, JR., S.B., M.S.

Associate Professor of Drawing
Office 451 Richards Hall Res. Cochituate Rd., Wayland

ALBERT KARL SCHMIEDER, S.B., M.S.

Assistant Professor of Mechanical Engineering
Office 75 Richards Hall Res. Randolph St., Canton

LYNN IRVINE SCHOONOVER, Ph.B., Ph.M.

Associate Professor of Finance
Office 100 Science Building Res. 12 Monroe Ave., Worcester

ROBERT ANDREWS SHEPARD, S.B., Ph.D.

Assistant Professor of Chemistry
Office 475 Richards Hall Res. Lake St., Wilmington

ALBERT SLAVIN, S.B., Ed.M.S., C.P.A.

Assistant Professor of Accounting
Office 103 Science Hall Res. 11 Westmore Rd., Mattapan

DAVID ORCHARD SMITH, A.B.

Instructor in Co-ordination
Office 252 Richards Hall Res. 68 Nichols Rd., Cohasset

JOSEPH SPEAR, A.B., M.A.

Professor of Mathematics and Chairman of the Department
Office 325 Richards Hall Res. 31 Matchett St., Brighton

GEORGE ALDEN SPEERS, A.B.

Director of Publications Division, University Press Bureau
Office 251 Richards Hall Res. 32 Hurley Place, Newton Centre

ERNEST LINCOLN SPENCER, S.B., M.S.

Associate Professor of Civil Engineering
Office 102 Botolph Building Res. 58 South St., Medfield

PAUL ROCKWELL SPINNEY

Assistant Director, Veterans and Student Accounts Office
Office 250 Richards Hall Res. 18 Standish Ave., Braintree

FREDERICK ARLINGTON STEARNS, S.B., M.S.

Associate Professor of Mechanical Engineering
Office 75 Richards Hall Res. 66 Florence Ave., Melrose

J. KENNETH STEVENSON, B.C.S.

Supervisor of Buildings and Grounds
Office 125 Richards Hall Res. 101 Goden St., Belmont

HAROLD LeROY STUBBS, A.B., M.A.

Electronics Research Associate
Office Greenleaf Building Res. 4 Howard St., Melrose

M.Sgt. STEPHEN COLEMAN SULLIVAN

Instructor in Military Science and Tactics
Office 203 Greenleaf Building Res. 31 Bayard St., Allston

GERALD RUSSELL TATTON, S.B., M.B.A.

Associate Professor of Physical Education and Head Coach of Track
Office 104 Student Center Building Res. 30 Sheridan Ave., Medford

- MAURICE DEKAY THOMPSON, S.B., Ph.D.
Office 246 Richards Hall
Lecturer in Physics
Res. 75 Mt. Vernon St., Boston
- GEORGE WESLEY TOWLE, S.B.
Office 253 Richards Hall
Associate Professor of Co-ordination
Res. 173 Lakeview Ave., Cambridge
- ELIOT FRANKLIN TOZER, S.B.
Office 451 Richards Hall
Professor of Drawing and Chairman of the Department
Res. 22 Devon Ave., Beverly
- WILLIAM VAN LENNEP, A.B., Ph.D.
Office 452 East Building
Lecturer in the Drama
Res. 57 Lakeview Ave., Cambridge
- ARTHUR ANDREW VERNON, S.B., M.S., Ph.D.
Director of Graduate Study in the College of Liberal Arts and Professor of Chemistry and Chairman of the Department
Office 425 Richards Hall
Res. 14 Standish St., Newton Highlands
- THOMAS HOMKOWYCZ WALLACE, S.B., A.M., Ph.D.
Office 246 Richards Hall
Associate Professor of Physics
Res. 47 Brooksdale Rd., Brighton
- WILLIAM WALLACE, S.B., M.A.
Office 325 Richards Hall
Assistant Professor of Mathematics
Res. 30 Oak St., Needham
- ARTHUR BERTRAND WARREN, A.B., M.A., Ph.D.
Professor of Psychology and Chairman of the Department
Office 354 Richards Hall
Res. 67 Bourne St., Auburndale
- ROBERT JOHN WEAVER, B.B.A., C.P.A.
Office 103 Science Hall
Assistant Professor of Accounting
Res. 47 Billings St., Atlantic
- GEORGE BAKER WELCH, S.B., Ph.D.
Office 247 Richards Hall
Associate Professor of Physics
Res. 18 Sylvester Rd., W. Newton
- ROBERT SELIM WHITE, S.B.
Office 75 Richards Hall
Instructor in Mechanical Engineering
On military leave of absence.
Res. 254 Main St., Waltham
- MYRA WHITE
Office Library, East Building
Librarian
Res. 118 Hemenway St., Boston
- ROBERT GREGG WILFONG, A.B., M.A.
Office 363 East Building
Assistant Professor of Government
Res. 106 Holden Green, Cambridge
- JOSEPH FIELDING WILLARD, S.B.
Office 101 Botolph Building
Instructor in Civil Engineering
On military leave of absence.
Res. 17 Linden St., Rockland
- EDWARD RICE WILLETT, S.B., M.A., Ph.D.
Office 100 Science Hall
Assistant Professor of Economics
Res. 43 Chapman Rd., Wakefield
- Sgt. JOHN MCPHEE WILSON
Office 203 Greenleaf Building
Instructor in Military Science and Tactics
Res. 48 Corey St., Charlestown
- JACOB WIREN, S.B.
Office Greenleaf Building
Electronics Research Assistant
Res. 360-A Pond St., Westwood
- ROY L. WOOLDRIDGE, S.B.
Office 253 Richards Hall
Instructor in Co-ordination
Res. 6 Codman Rd., Hingham
- JOSEPH PETER ZABILSKI, S.B.
Head Coach of Football and Basketball and Assistant Professor of Physical Education
Office 104 Student Center Building
Res. 74 Royal St., Wollaston
- JOSEPH WILLIAM ZELLER, S.B., M.E.
Office 75 Richards Hall
Professor of Mechanical Engineering
Res. 282 Concord St., Framingham
- RUSSELL DOUGLAS ZIMMER, S.B.
Office 103 Greenleaf Building
Instructor in Mechanical Engineering
Res. 23 Harwood Rd., Natick
- SAVERIO ZUFFANTI, S.B., M.A.
Office 425 Richards Hall
Professor of Chemistry
Res. 112 Quincy Shore Drive, Quincy

Teaching Fellows

- WILLIAM G. DEGENHARDT, A.B.
Office 424 Science Hall
Teaching Fellow in Biology
316 Huntington Ave., Boston
- STANLEY VICTOR DUBIEL, JR., S.B.
Office 475 Richards Hall
Teaching Fellow in Chemistry
Res. 148 Hemenway Street, Boston

PAUL BREWSTER GILMAN, JR., S.B.

Office 475 Richards Hall

RICHARD ARMAND HEBERT, S.B.

Office 475 Richards Hall

LEON EARL DWIGHT PEASE, JR., S.B.

Office 475 Richards Hall

DONALD JOHN WILSON, S.B.

Office 475 Richards Hall

Teaching Fellow in Chemistry

Res. Groton

Teaching Fellow in Chemistry

Res. 12 Fairmount Ave., Haverhill

Teaching Fellow in Chemistry

Res. 83 Westland Ave., Boston

Teaching Fellow in Chemistry

Res. 10 Symphony Rd., Boston

Chapel Preachers

REV. DR. EDWIN P. BOOTH

Head of Department of New Testament, Boston University, Boston

REV. DR. EMORY S. BUCKE

Editor, Zion's Herald, Boston

REV. JACKSON BURNS

Minister, Harvard-Epworth Methodist Church, Cambridge

REV. OLIVER W. CHILDERS

Minister, First African Methodist-Episcopal Church of Boston

RABBI BERYL D. COHON

Rabbi, Temple Sinai, Boston

REV. HAROLD H. CRAMER

Minister, First Methodist Church, Needham Heights

REV. ROBERT B. DAY

Executive Secretary of the Benevolent Fraternity of Unitarian Churches, Boston

REV. DR. FRANK E. DUDDY

Minister, North Cambridge Congregational Church, Cambridge

DR. CARL S. ELL

President, Northeastern University, Boston

REV. DR. THEODORE P. FERRIS

Rector, Trinity Church, Boston

RABBI CHARLES S. FREEDMAN

Hillel Foundation, Boston

REV. HAMILTON M. GIFFORD

Minister, Newtonville Methodist Church, Newtonville

REV. DR. R. EUGENE GILMORE

Minister, First Congregational Church, Hyde Park

REV. DANA M. GREELEY

Minister, Arlington Street Church, Boston

REV. DR. CHARLES W. HAVICE

Dean of Chapel, Northeastern University, Boston

REV. WALTER P. HURLEY

Rector, Church of the Good Shepherd, Dedham

RABBI ISRAEL KAZIS

Rabbi, Temple Mishkan Tefila, Roxbury

REV. J. EDWIN LACOUNT

Morgan Memorial, Boston

REV. FREDERIC C. LAWRENCE

Rector, St. Paul's Episcopal Church, Brookline

REV. DR. ELMER A. LESLIE

Professor of Hebrew and Old Testament Literature, Boston University, Boston

REV. WILLIAM R. LESLIE

Minister, St. Mark's Methodist Church, Brookline

REV. DR. T. LEONARD LEWIS

President, Gordon College of Theology and Missions, Boston

REV. DR. SIDNEY LOVETT

Chaplain, Yale University, New Haven, Connecticut

REV. DR. FREDERICK M. MEEK

Minister, Old South Church, Boston

REV. SAMUEL H. MILLER

Minister, Old Cambridge Baptist Church, Cambridge

REV. DR. WILBURN B. MILLER

Minister, First Parish Church, Cambridge

REV. DR. ROY L. MINICH

Minister, First Church, Congregational, Malden

REV. CHARLES H. MONBLEAU

Minister, First Parish in Malden, Malden

REV. DR. WALTER G. MUELDER

Dean, Boston University School of Theology, Boston

REV. DR. HAROLD J. OCKENGA

Minister, Park Street Church, Boston

REV. ROY M. PEARSON

Minister, Hancock Congregational Church, Lexington

REV. DR. PRENTISS L. PEMBERTON

Professor, Andover-Newton Theological School, Newton

REV. DR. RICHARD D. PIERCE

Dean of Chapel, Emerson College, Boston

REV. DR. PALFREY PERKINS

Minister, King's Chapel, Boston

REV. DR. VIVIAN T. POMEROY

Minister, First Church in Milton

REV. DR. JOHN M. RATCLIFF

Dean, School of Religion, Tufts College

REV. DR. WILLIAM B. RICE

Minister, Wellesley Hills Unitarian Church, Wellesley Hills

REV. DR. EDMUND A. STEIMLE

Minister, The University Lutheran Church, Cambridge

REV. DR. CHARLES L. TAYLOR, JR.

Dean, Episcopal Theological School, Cambridge

VERY REV. EDWIN J. VANETTEN

Dean, St. Paul's Cathedral, Boston

REV. WILBUR C. ZIEGLER

Minister, Broadway Methodist Church, Lynn

General Statement

NORTHEASTERN UNIVERSITY is incorporated as a philanthropic institution under the General Laws of Massachusetts. The State Legislature, by special enactment, has given the University general degree granting powers.

The Corporation of Northeastern University consists of men who occupy responsible positions in business and the professions. This Corporation elects from its membership a Board of Trustees in whom the control of the institution is vested. The Board of Trustees has four standing committees: (a) an Executive Committee which has general supervision of the financial and educational policies of the University; (b) a Committee on Buildings which has general supervision over the building needs of the University; (c) a Committee on Funds and Investments which has the responsibility of administering the funds of the University; (d) a Committee on Development which is concerned with furthering the development plans of the University.

Founded in 1898, Northeastern University, from its beginning, has had as its dominant purpose the discovery of human and social needs and the meeting of these needs in distinctive and highly serviceable ways. While subscribing to the most progressive educational thought and practice, the University has not duplicated the programs of other institutions but has sought "to bring education more directly into the service of human needs."

The Northeastern Plan of Education is especially designed for students who must earn while they learn. Basically this Plan consists of two types of education:

- (1) The Day Colleges are conducted upon the co-operative basis whereby upper-class students alternate regular periods of instruction at the University with similar periods under supervised employment upon a job with pay in business or industry. Approximately six hundred business and industrial concerns co-operate with Northeastern University in making this program effective.
- (2) The Evening Division offers curricula for students who hold regular jobs in the day and attend classes in the evening hours.

The following is a brief outline of the principal types of educational opportunities offered:

In the Field of Liberal Arts

The College of Liberal Arts offers majors in the usual fields of the arts and sciences leading to the degrees of Bachelor of Arts and Bachelor of Science. With the exception of pre-professional programs day curricula are normally five years in length and operated on the co-operative plan. However, in all majors except Chemistry and Physics, qualified students may be excused from the co-operative plan by the Dean and may complete the requirements for the degree in four years.

The College of Liberal Arts also offers certain of its courses during evening hours, constituting a program of three years' duration equivalent in hours to one-half the requirements for the A.B. or S.B. degree, and providing a general education and preparation for admission to the School of Law. The degree of Associate in Arts is conferred upon those who complete this program.

In the Field of Business

The College of Business Administration offers five year co-operative curricula in Accounting, Industrial Relations, Marketing and Advertising, Finance and Insurance, and Business Management leading to the degree of Bachelor of Science in Business Administration.

The School of Business — operated during evening hours — offers undergraduate curricula leading to the degree of Bachelor of Business Administration in Accounting, Business Management, Industrial Management, Law and Business, Marketing, Traffic and Transportation, and Engineering and Management. For students who because of occupational reasons desire shorter programs concentrating in specific areas, Institutes awarding the certificate are offered in Insurance, Labor Relations, Municipal Management, Office Management, Real Estate, Retailing, Traffic and Transportation, and World Trade.

The Graduate Division of the School of Business provides an evening program of graduate study leading to the degree of Master of Business Administration.

In the Field of Engineering

The College of Engineering offers five year co-operative curricula in Civil, Mechanical, Electrical, Chemical, and Industrial Engineering leading to the degree of Bachelor of Science with specification according to the department in which the student qualifies.

The College of Engineering also offers during evening hours graduate programs of instruction leading to the degree of Master of Science in certain fields of Civil, Mechanical and Electrical Engineering and in Mathematics-Physics. These evening curricula are designed to be of service to young engineering graduates who are employed in the Greater Boston area.

The Lincoln Technical Institute offers during evening hours programs leading to the degree of Associate in Engineering in Chemistry, Civil and Structural, Mechanical, Electrical, Electronic, and Industrial Engineering.

In the Field of Law

The School of Law conducts both a day and an evening undergraduate program which prepares for admission to the bar and for the practice of the law and leads to the degree of Bachelor of Laws. A graduate program is also offered which leads to the degree of Master of Laws.

Buildings and Facilities

Boston — A Great Educational Center

The fact that Northeastern University is in Boston broadens the educational and cultural opportunities of its students. Few other cities in the country are so rich in the finest elements of American life. Many of its historic buildings, such as the Old State House, Faneuil Hall, and the Old North Church, have become museums for the preservation of old documents, paintings, and other collections, representative of early colonial life. The Boston Public Library and the Museum of Fine Arts, both within a few blocks of the University, are widely noted for

their treasures of literature and art. Even nearer to the University is Symphony Hall, home of the world-famous Boston Symphony Orchestra. And the many churches within Greater Boston not only afford the opportunity of hearing distinguished preachers but through their student clubs and young people's societies make possible a fine type of social and intellectual life.

University Buildings

Location

Northeastern University, except for its School of Law, is located on Huntington Avenue, Boston, at the entrance to the Huntington Avenue Subway and opposite the historic Boston Opera House. The main administrative offices of the University are located in Richards Hall.

The chief railroad centers of Boston are the North and South Stations. To reach the University from the North Station, board a car going to Park Street, at which junction transfer to any Huntington Avenue car. To reach the University from the South Station, board a Cambridge subway train for Park Street Under. There go up one flight of stairs and board any Huntington Avenue car, alighting at the "Northeastern" Station which is the first stop outside the subway.

Huntington Avenue Campus

The principal educational buildings of Northeastern University are located on a sixteen acre site in the Back Bay Section of Boston. They have been erected in accordance with a long range development plan for meeting the University's needs and the largest units are interconnected by means of tunnels so that students can go from building to building without going out of doors in inclement weather. Brief functional descriptions of the various University buildings follow:

Richards Hall — Headquarters of the main administrative officers and staff of both day and evening divisions and the central office. The ground floor contains the University Bookstore, a checkroom, receiving room, mechanical engineering laboratories, and classrooms.

On the first floor are located offices of the president, vice-president, deans, director of admissions, director of public relations, and the bursar. The three upper floors of Richards Hall are given over to additional administrative and instructional offices, classrooms, lecture halls, and the principal laboratories of the departments of physics, chemistry, and psychology. The penthouse contains a radio room and laboratories for chemical research.

Student Center Building — The Student Center comprises a building of five stories located in the middle of the campus together with the Alumni Auditorium which seats about 1300 people.

Outstanding features of the Student Center Building are the beautiful memorial chapel which accommodates 250 persons given in memory of Charles F. Bacon, the large public lounge given in memory of Edward J. Frost, the Student Health Center given in memory of Samuel Glass, the Student Activities Office given in memory of Albert Farwell Bemis, the Student Union Lounge given in memory of Richard Mitton, the Student Conference Room given in memory of Russell

Whitney, the Student Reading Room given in memory of Gordon F. Wright, the Faculty Lounge given in memory of Robert Lee Studley, and the main lobby given by Clara and Joseph F. Ford.

The Student Center also contains headquarters for the various student organizations such as the *Northeastern News*, *The Cauldron*, Dramatic Society, the Camera Club, and the Northeastern Student Union.

Facilities for lunching purposes are provided in the University Commons on the ground floor. Also located on the ground floor is a large recreational area especially for women students. Although the building is primarily used for student activities, there are a few classrooms on the third and fourth floors.

Science Hall — Science Hall comprises a ground floor and four upper stories housing laboratories, classrooms and offices. Chemical Engineering facilities take up the entire ground floor and part of the first floor. Faculty offices and laboratories of the College of Business Administration occupy the remainder of the first floor. The second and third floors contain a large lecture hall, several drawing rooms, and classrooms. The fourth floor is given over almost entirely to the biological laboratories and offices, research areas, and the biology lecture room.

Library Building — This structure, completed in 1951-52, is a companion building to Richards Hall, consists of five floors, and contains about 85,000 square feet of floor area. It provides reading room seating capacity for over 600 students and stack capacity for 170,000 volumes in addition to the special facilities of a modern university library. A well-equipped listening room, a browsing library, smoking rooms, and a microfilm room are included among these facilities.

Until such time as the upper two and one-half floors are needed for library purposes, they will house the Department of Drawing, the Department of History and Government, the Departments of English and Modern Languages, and will provide several classrooms and drawing rooms.

Botolph Building — The Botolph Building, located directly behind the Y. M. C. A., houses the following laboratories: Advanced Industrial Electronics, Electrical Measurements, Dynamo, Electronics and Communications, Ultra High Frequency, Hydraulics and Sanitary Engineering, and Concrete and Highway. In addition, it provides space for department offices, classrooms, conference rooms and one large drafting room.

Greenleaf Building — The Greenleaf Building, formerly occupied by the Medical School of Tufts College, was acquired by the University in 1949 and now houses the Maintenance Department, the Department of Industrial Engineering, and the Department of Military Science and Tactics. The Greenleaf Building also makes available several additional classrooms, faculty offices, and research areas. It is a 2½ story brick building on the westerly end of the University's Huntington Avenue campus.

Parking Facilities — Extensive parking areas for students and staff are included on the Huntington Avenue campus between Richards Hall and the Greenleaf Building with an auxiliary parking space behind the Boston Opera House in the triangle formed by St. Stephen, Forsyth, and Hemenway Streets.

Laboratories

The laboratories of the University fall into three categories. The first group includes those for experimental work in the sciences of biology, chemistry, physics, and psychology. The second includes those for the study of engineering in its major branches (civil, mechanical, electrical, chemical, and industrial). The third comprises the business and statistical laboratories.

In addition to these laboratory facilities which are described in the following pages, motion pictures and lantern slides are frequently used to supplement classroom instruction. For this purpose, there are available motion picture projectors for both sound and silent film as well as lantern slide projectors.

Biology

The Department of Biology occupies the fourth floor of Science Hall which contains, in addition to the Zoological, Anatomical, Bacteriological, and Botanical Laboratories, its offices, research areas, and lecture hall. The laboratories are fully equipped for general and special work, with extensive collections of museum preparations, models, and specimen collections displaying thousands of specimens illustrating the various fields of biological study.

Chemistry

The Chemical Laboratories located on the fourth floor of Richards Hall were given to the University by the Charles Hayden Foundation. They are equipped for work in general and inorganic chemistry, qualitative and quantitative analysis, and organic and physical chemistry.

There are also service rooms, research laboratories and a shop.

General Chemistry and Qualitative Analysis — This laboratory is equipped with gas, water, electricity, balances and fume hoods. Hydrogen sulfide is connected in the hoods from a separate room which contains cylinders and a gasometer. Each student is assigned a drawer containing all his needed equipment.

Organic Chemistry — Services on the laboratory benches include gas, water, steam and steam cones. Each student has a locker and two drawers for equipment as well as ample working space. Fume hoods, a large steam evaporator, and an ice chest are installed along the walls.

Quantitative Analysis and Physical Chemistry — The tables and fume hoods and other equipment in this room are similar to those in the Organic Laboratory with the addition of variable voltage direct current.

In addition there is a drying oven, electric hot plate, and refrigerator.

The balances are in an adjoining well-lighted room.

Instrumental Analysis Laboratory — Adjoining the quantitative analysis laboratory are two smaller laboratories equipped with modern instruments for analysis of solids, liquids, and solutions. Apparatus is also available for technical analysis of commercial materials.

Research — Three smaller laboratories are available for graduate student research.

Physics

The Physics Laboratories located on the second floor of Richards Hall are fully equipped for elementary and advanced study as well as research.

General — This laboratory, designed for elementary instruction, is provided with gas, water, and electricity. A spectrometer room, a photographic room, and a photometer room are directly connected with this laboratory.

A second smaller laboratory is equipped for more specialized experiments, and has facilities for glass blowing and high vacuum work. A flexible electrical system here permits use of all the supplies available to the Advanced Laboratory.

Advanced — This laboratory is designed with a view to both precision and flexibility. A special switchboard provides single phase and polyphase alternating current and a variety of direct current potentials. A workshop with lathe, drill press, grinder, and other tools as well as two separate research rooms complement the laboratory.

Optics — This laboratory used for advanced work in both physical and geometrical optics is especially equipped for the former. Direct electrical connection to the special switchboard in the Advanced Laboratory is provided for use with the various light sources.

Radio — This laboratory has a complete set of apparatus for conducting experiments in Radio and Electronic Circuits. Apparatus includes crystal oscillators, audio and radio frequency amplifiers, audio and radio frequency oscillators, cathode ray oscilloscopes, frequency modulation and industrial electronic equipment, complete radio transmitters and receivers.

The amateur radio transmitting station is in a completely shielded room and operates on both radiotelephone and radiotelegraph. Facilities are also available for research.

Psychology

The Psychology Laboratories, located on the third floor of Richards Hall, are equipped for training and research in both experimental psychology and psychometrics.

The Experimental Laboratory is designed for instruction in learning processes, the factors involved in perception and the bases of sensation. Opportunity is provided for individual research for advanced students.

The Psychometrics Laboratory is equipped for training in the use of mental tests. Instruction is available on the nature of tests of intelligence, aptitudes, and personality. There is opportunity for practice and research in the use of psychometric instruments.

Civil Engineering

Much of the laboratory work in civil engineering is, of course, actual field work in surveying. A considerable amount of demonstration equipment, including many models, is available for use in the study of structures, hydraulics, sanitary engineering, highways, concrete and soil mechanics.

Surveying — The Department of Civil Engineering is provided with a variety of excellent and up-to-date equipment for field work. The instruments have been chosen to make possible the working out of advanced as well as elementary field problems, and to acquaint the students with the principal makes and types of instruments in general use.

Hydraulics and Sanitary Engineering — This laboratory located on the first floor of the Botolph Building is equipped with demonstration measuring devices for use in connection with the courses in hydraulics.

Complete equipment is also provided for water and sewage analysis, and research students can be accommodated in this field.

Concrete and Highway Engineering — Located on the first floor of the Botolph Building, this laboratory is equipped for conducting all the standard tests on cement, aggregate, and concrete. The testing machines in the Mechanical Engineering Department are available for testing use by Civil Engineering students.

A large moist room with controlled temperature and 100% humidity makes possible the proper curing of specimens.

The testing areas of this laboratory are equipped with temperature and humidity control so that research may be carried on under standard conditions.

Some of the types of special equipment are the following: sonic modulus device, hand powered and mechanized flow table, autoclave, and a 12 cubic foot freeze-thaw unit.

Equipment is also available for conducting a major portion of the accepted tests on bituminous materials as used in highway work. Soil Mechanics equipment consists of a general soil sampler, consolidometer, wet-mechanical gram-size analysis and a quicksand demonstration tank.

Aerial Photogrammetry — The apparatus in this laboratory may be used to instruct the students in the basic principles of photogrammetry, or may be used to instruct the students in the more technical phases of photogrammetry such as horizontal control, vertical control, stereoscopic plotting, mechanical triangulation, and the tri-metrogon method of plotting.

Mechanical Engineering

The Mechanical Engineering Department has a well-equipped laboratory containing a wide variety of modern machines and occupying over 10,000 square feet of floor space in Richards Hall. A canal located in the laboratory, having a capacity of about 18,000 gallons of water, is used for hydraulic experiments. Special areas are available for oil testing, mechanics, research and similar purposes. Auxiliary equipment is used for making the usual tests and measurements.

Steam Power — The apparatus operated by steam includes a wide variety of steam engines, turbines, pumps, condensers, heat exchangers, and measuring instruments.

Hydraulic Equipment — Water pumps are available for testing and include piston pumps, centrifugal pumps, power and rotary pumps, as well as a pulsometer and steam injector. Different types of weirs with hook gages, and other flow measuring devices, including pilot tube, venturi tube, orifice and water meters, are used for flow of fluids experiments.

Fans and Air Compressors — A steam driven air compressor and a centrifugal fan are arranged for testing purposes.

Heating, Refrigeration, and Air Conditioning — Heating equipment includes a steam boiler, a hot air furnace and a unit steam heater. Air conditioning apparatus is available for heating, cooling, humidifying and dehumidifying. There is in addition a constant temperature room which may be used for either heating or cooling purposes.

Metallography and Heat Treatment — A metallograph capable of magnifying up to 2500 diameters is available for photographing crystalline structures of metals and alloys. Grinding and polishing equipment and metallurgical microscopes are used in the preparation and examination of the specimens.

For the study of heat treatment, several electric furnaces and a gas-fired furnace are available for use.

Internal Combustion Equipment — Included under this heading are several gasoline and oil engines, automobile engines, Diesel engines and a C.F.R. machine. Some of these are set up for running experimental tests, but several are available for dismantling and demonstration purposes.

Testing Materials — Universal testing machines of 10,000, 15,000, 50,000 and 300,000 lb. capacities are used for most of the tests. In addition, there are four types of hardness testers, 10,000 in. lb. torsion, 220 ft. lb. impact, endurance and bend units as well as equipment for non-destruction tests, such as photoelasticity and magnaflux. Suitable strain gages and other instruments for conducting the undergraduate tests are available.

Aeronautics — The laboratory is provided with a 3-foot hexagonal throat wind tunnel for model testing up to speeds of 150 miles per hour. A number of types of airplane engines are available for inspection and dismantling purposes. Demonstration apparatus for streamline flow is also included.

Metal Processing — The laboratory for metal processing consists of lathes, planers, boring mill, drill presses, milling machine, shaper, grinders, and small tools. The laboratory also has numerous heat treatment furnaces, oxyacetylene welding and cutting tools, electric resistance welding and other equipment to adequately carry on the work in production processes.

Miscellaneous Equipment — In addition to the apparatus previously mentioned, the laboratory has available testers for calibrating gages, oil testing equipment, fuel calorimeters, steam calorimeters, and friction testers, as well as instruments for measuring speed, temperature, pressures and flow of fluids.

Electrical Engineering

The ground floor and part of the first floor of the Botolph Building are occupied by the electrical laboratories. These cover an area of approximately 9000 square feet and include the dynamo, measurements, electronics and communications, ultra high frequency, and advanced industrial electronics laboratories.

Dynamo — This laboratory is provided with both 60 cycle 3 phase 230 volt alternating current and 115-230 volt three-wire direct current power services.

The equipment includes more than sixty motors and generators, both a-c and d-c, of different types, together with the necessary auxiliary equipment to operate and test them. In addition, there are numerous transformers and other static equipment including a steel tank mercury arc rectifier unit. The motors and generators have been selected to reduce as much as possible the risk from high voltage and yet be typical of the range of commercial apparatus.

Electrical Measurements — The equipment here is of two distinct types: first, that planned primarily for teaching principles of measurement and, secondly, that which is used in teaching advanced standardizing methods as well as for calibrating instruments in other laboratories of the University. Briefly, this laboratory is equipped for practically any work in electrical measurement except for the absolute determinations carried on in national standardizing laboratories.

Electronics and Communications — This laboratory is equipped with apparatus for about forty experiments in the field of electronics and radio-engineering. The apparatus includes several radio frequency signal generators, vacuum tube voltmeters, cathode-ray oscilloscopes, audio oscillators and a primary frequency standard.

Ultra High Frequency — The equipment in this laboratory consists of several ultra-high-frequency generators, cylindrical and rectangular wave guides, antenna arrays and reflectors, frequency measuring equipment, and power measuring devices.

Advanced Industrial Electronics — In this laboratory equipment is available to demonstrate and test power apparatus controlled by electronic means. The following pieces of equipment are among those found in this laboratory: Induction and Dielectric heating, Industrial X-Ray, Controlled Welding, Ignitron Inverter and Rectifier, Motor speed control, Generator voltage control, Electrostatic air cleaning, Photoelectric control, and Automatic Synchronizing apparatus. Characteristics of individual power electron tubes are also investigated, including high vacuum rectifiers, ignitrons and thyatrons.

Research Laboratories — Over the past several years the department has developed extensive laboratory facilities for the conduct of research in the field of electronics. Two substantial projects are currently being carried on by members of the Electrical Engineering faculty for the U. S. Air Force. On certain aspects of this program co-operative students are employed as research assistants.

Chemical Engineering

The Department is located on the ground floor of Science Hall. A total of 8,515 square feet is devoted to its exclusive use.

Unit Operations Laboratory — Approximately 1,000 square feet of the 3,000 square feet in the laboratory has a 25-foot ceiling. The larger pieces of equipment including a double effect vacuum evaporator, a continuous bubble-cap distillation unit, a packed column absorption system, and a Dowtherm heating unit are located in this two-story area. Throughout the remaining area are found typical pilot-plant or semi-commercial size equipment used to study such unit operations as filtration, drying, mixing, and dispersion.

Crushing, Grinding and Separation Laboratory — A separate laboratory equipped with a ventilating fan houses equipment for crushing, pulverizing, and separating solids. All equipment is operated by individual electric motors with speed control frequently taken advantage of to get experimental data.

Machine Shop — A small, well-equipped shop is available for the construction and repair of equipment.

Research Space — Two small laboratories are available for research. Investigations are also carried on in other areas depending on equipment needed.

Industrial Chemical Laboratory — This laboratory is equipped and used for chemical process development. Research projects are carried on by senior Chemical Engineering students in this area.

Industrial Engineering

Students in the Department of Industrial Engineering share in the use of the Mechanical Engineering Laboratories and the Statistics Laboratory.

Industrial Engineering Laboratory — This laboratory, which is located in the Greenleaf Building, is completely equipped with the latest facilities and tools used by methods engineers. Besides the general equipment consisting of benches, tables, lathes, jigs, fixtures, conveyor belt, and racks, the laboratory has an ample supply of time study boards, stop watches and timers for time study work. There are also available complete motion picture equipment and micro-chronometers for micromotion work.

Statistics Laboratory

The Statistics Laboratory is equipped with the commonly used office machines, hand and electric adding machines, and hand and electric calculators. This laboratory is used primarily in connection with the courses in Statistics, but it is available for students in connection with reports and the statistical work of other courses.

Accounting and Advertising Laboratory

The Accounting and Advertising Laboratory is being developed to provide permanent display equipment and materials, teaching aids, and production equipment for the advanced courses in the fields of Accounting and Advertising.

Typewriting Laboratory

This room is equipped with a battery of 24 typewriters for use of students who wish to develop facility in typewriting skill and for those who wish to typewrite class notes or other written assignments.

Design and Drafting Rooms

The top floor of the Library Building contains seven large, light, and well-equipped drawing rooms for the carrying on of the designing and drafting which form so important a part of engineering work. These rooms are supplied with lockers containing the drawing supplies, files containing blueprints, and photographs of machines and structures that represent the best practice. Drafting room blackboards are equipped with traveling straightedge devices which facilitate speed and accuracy in blackboard demonstrations.

Equipment for Physical Training

Gymnasium areas are provided as follows: three gymnasium rooms, a twelve-lap running track, boxing and wrestling rooms, handball and squash courts, bowling alleys, showers, steam baths, massage rooms, electric cabinet baths, and locker rooms.

Special areas for the physical education program for women students are located in the Student Center Building.

Excellent practice facilities for tennis and track are available in the space adjacent to the North Parking Area.

Northeastern University Athletic Field

The University athletic field is located on Kent Street in Brookline and provides ample facilities for track, baseball, football and other outdoor sports. The University maintains bus service between its Huntington Avenue plant and the field, making it possible for students to get back and forth with a minimum loss of time. The field is equipped with a commodious field house as well as ten sections of stadium seats for spectators.

Student Activities

Northeastern University regards student activities as an integral part of its educational program. One of the main departments of the University, the Student Activities Department, is charged with the responsibility of co-ordinating the various types of activities and of administering the social, musical, literary, and athletic organizations in such a way as to enable each to contribute in a wholesome, worthwhile manner to student life at Northeastern. Every student is encouraged to participate in such activities as may appeal to him.

Members of the faculty also are interested in extracurricular activities. A faculty adviser is appointed for each student organization. His function is to encourage the students in the development of their programs, and to give them the benefit of his experience and mature point of view in integrating these programs with other important phases of college life.

One of the outstanding contributions of the Co-operative Plan in the field of higher education has been its capacity to develop in students those powers of social understanding that are so essential to success in professional life. At Northeastern the program of student activities is made to contribute to this end in a very real way. It is a conscious aim of the student activities advisers to develop among their advisees those qualities of personality and character which will enhance their usefulness as future professional men and citizens. Students have splendid opportunities to develop administrative and executive ability as leaders of undergraduate organizations. No academic credit is awarded for any student activity. This has been no deterrent, however, to student participation in extracurricular activities, for a substantial majority of the undergraduate body participate annually in one or more forms of student activity.

Athletics

The University maintains both varsity and freshman teams in baseball, basketball, cross-country, football, hockey, and track. Games and meets are arranged

with many eastern colleges. In addition to intercollegiate competition, a program of intramural sports is carried out under the supervision of the Department of Student Activities.

Athletic policies for the University are determined by the Faculty Committee on Student Activities. This committee determines the eligibility of students to participate in athletics, approves the various sports schedules, and approves awards of letters and numerals to qualified athletes.

Honor Societies

Four honorary societies are chartered in the Day Colleges:

Tau Beta Pi, in the College of Engineering (Massachusetts Epsilon Chapter).

Eta Kappa Nu, in the Department of Electrical Engineering (Gamma Beta Chapter).

The Sigma Society, in the College of Business Administration.

The Academy, in the College of Liberal Arts.

Election to the college honorary societies is based primarily upon scholarship, but before a man or woman is privileged to wear the honorary society insignia there must be evidence of an integrity of character and an interest in the extra-curricular life of the University as well as an acceptable personality. The societies have memberships consisting of the outstanding men and women in the Day Colleges. Election to an honorary society is the highest honor that can be conferred upon an undergraduate.

Publications

"The News" — A college newspaper, the *Northeastern News*, is published each week throughout the college year by a staff selected from the student body. The copy is prepared, edited, and published by the students themselves with the counsel of a faculty adviser. Opportunity is afforded for the students to express their opinions on subjects relating to study, co-operative work, social events, or topics of the day. Positions on the *News* staff and promotions are attained by competitive work. The paper is in part supported by advertising, both national and local, and in part by a portion of the student activities fees. The *Northeastern News* is a member of the Eastern Intercollegiate Newspaper Association, and sends one of its editors to the annual convention of this association each year. Copies of the *News* are mailed to upperclassmen when they are at co-operative work and to freshmen after the close of their college year.

"The Cauldron" — The combined senior class publishes annually a college year-book, *The Cauldron*. It is ready for distribution in the latter part of the second term and contains a complete review of the college year with class histories, pictures of all seniors, of the faculty, and of undergraduate groups, as well as a miscellany of snapshots and drawings contributed by students.

Student Council

Student government of the Day Colleges at Northeastern University is vested in the Student Council, composed of elected representatives from the various classes. The Council is the authority on all matters relating to student policies not definitely connected with classroom procedure. It has jurisdiction, subject to faculty approval, over all such matters as customs, privileges, and campus regulations.

Student Union

The purpose of the Northeastern Student Union is to deepen the spiritual lives of Northeastern men and women through the building of character, to create and promote a strong and effective Northeastern University spirit in and through a unified student body, to promote sociability, and to emphasize certain ethical, social, civic, intellectual and avocational values.

All students are encouraged to participate in the activities of the Union, no matter what their religious faith, as the work of the Union is entirely nonsectarian.

The Union conducts a weekly chapel service in the Bacon Memorial Chapel in the Student Center Building, to which all faculty members and students are invited. The service, which is nonsectarian and voluntary, is held on Wednesdays from 1:15 to 1:45 o'clock. Many eminent preachers of Greater Boston are engaged to deliver brief addresses.

Professional Societies and Clubs

To assist in the promotion of social, cultural, and intellectual advancement through informal channels, a number of professional societies and clubs are sponsored.

Accounting Society — All students interested in accounting are invited to become members of this club. Problems involving accounting are presented and discussed at club meetings. Upperclassmen present problems arising out of thesis or co-operative work experience, and able practitioners from the professional world are invited to present papers and lead the student discussions.

Advertising Club — Affiliated with the Junior Advertising Club of Boston, this Student Chapter is committed to the development of professional associations and interests among its members.

Art Club — The Art Club is open to all Northeastern students interested in sketching or painting. Weekly meetings are organized to provide instruction and guidance in pencil and charcoal sketching, water coloring, and oil painting. The regular program includes several field trips for practice in sketching or painting seascapes and landscapes. Several exhibitions of the work of members are held during the year.

Biology Club — The Biology Club (Nu-Beta) serves to stimulate interest in the biological sciences by presentations of motion picture films, lecturers and field trips. Membership is open to all students without restriction.

Camera Club — The Camera Club welcomes all men and women interested in photography. Weekly discussions and special evening lectures by guest artists are part of the yearly program. Field trips, monthly photo contests and a general exhibition add to the interest and progressive work of this organization.

Chess Club — The Chess Club gives both beginners and experts an opportunity to enjoy the game. Yearly tournaments are held among the members and from time to time the Club engages in intercollegiate competition.

Debating Society — The purpose of the Debating Society is "to foster and promote an interest and facility in formal argumentation; to develop an im-

partial, unbiased, and intellectual consideration of questions and issues of current interest; and to sponsor intercollegiate relationships and competition in the debating field." Membership is open to all students of the Day Colleges.

Dramatic Club — The Silver Masque affords an opportunity for those students interested in dramatics to participate in the production of several pieces in the course of the college year. Qualification for the cast and for positions on the business staff is through competition under the direction of the faculty adviser.

Engineering Societies, National — Students in the several professional curricula of the College of Engineering operate Northeastern University Sections of the appropriate national professional societies. Chief among these are the following:

- American Society of Civil Engineers
- Boston Society of Civil Engineers
- American Society of Mechanical Engineers
- American Institute of Electrical Engineers
- American Institute of Chemical Engineers
- American Institute of Industrial Engineers
- Society for the Advancement of Management
- American Chemical Society

Members of the engineering faculty who hold membership in the parent organizations serve as advisers to these student groups. Meetings are held regularly, usually at night so that students from both divisions may attend, and practicing engineers are invited to address the sections. Occasionally appropriate motion pictures are shown, or the group visits some current engineering project in the vicinity of Boston. The College of Engineering encourages these student sections of the technical societies in the belief that they provide a wholesome medium for social intercourse as well as a worthwhile introduction to professional life.

Husky Key — This organization for the promotion of school spirit provides special services at athletic events and for visiting teams and other groups.

Hus-Skiers — The purpose of the Hus-Skiers is to hold an integrated program of ski activity, including weekend outings during the winter season. A tournament is held at the close of the season in which all members are eligible to take part. The club holds membership in the New England Intercollegiate Ski Conference. Skiing is recognized as a minor sport.

International Relations Club — The International Relations Club was founded for the purpose of studying and discussing those current national and international events and issues which vitally concern our American life and institutions. The club maintains contacts with similar organizations in other colleges.

Investment Society — The purpose of this society is to increase knowledge of the investment field by providing opportunities for discussions and by arranging for supplementary talks by outstanding personalities in the professional world of finance.

All interested students are welcome at the meetings, which are held regularly during each ten-week term.

Marketing Association — Students in the College of Business Administration maintain a student chapter of the American Marketing Association for the purpose of enhancing the professional development of its members. Meetings are held each ten-week period at which executives from Greater Boston discuss current issues in the field.

Mathematics Society — The Mathematics Society encourages the study of topics of mathematical interest which are either outside or beyond the scope of the regular mathematics courses. Membership is restricted to those men and women who have completed one and one-half years of study in mathematics and have an average grade of not less than "C" in mathematics courses up through differential calculus. Although membership is limited to upperclassmen, freshmen especially interested in mathematics are always welcome at meetings of the Club.

The final program of the year is devoted to a dinner meeting for which some prominent outside speaker is procured.

Musical Clubs — The Department of Student Activities sponsors musical clubs, such as the following: concert orchestra, band, glee club, and dance orchestra, for which all students with musical ability are eligible. Membership in the various musical clubs is attained by competitive effort.

Each organization has a faculty adviser and each elects a representative to the Musical Clubs Council. The purpose of this council is to co-ordinate the various musical activities of the Day Colleges. At the annual Musical Clubs Banquet, held early in the spring, charms are awarded to the leaders and managers of the several clubs and to members who have played over a period of three full years.

Omega Sigma Society — This club was organized in 1943 for all women students enrolled in the Day Colleges, to enhance the social and intellectual life of co-eds at Northeastern.

Psychology Society — An organization in which interests in technical psychology are pursued. The membership is open principally to majors in the field of psychology, but this does not preclude from participation any or all students who have an active interest in psychology.

Radio Club — One of the most popular undergraduate activities is the Radio Club. Members are provided opportunity for code practice and are encouraged to obtain their amateur licenses. The club owns and operates station WIKBN, a short wave transmitter, located in the Radio Laboratory in the penthouse of Richards Hall. Meetings are held about once a month for the discussion of technical matters. Practicing radio engineers are frequently invited to address the club at evening meetings, when students in both divisions may attend.

Square Dance Club — This organization is composed of students interested in learning the techniques and forms in square dancing. Demonstrations are given before the general student body from time to time throughout the year.

Tennis Club — Tennis players will find this club interesting and helpful in arranging intramural tournaments.

Yacht Club — The Yacht Club is a member of the Intercollegiate Yacht Racing Association. The club participates in regattas held in the Charles River Basin and also in regattas held at other colleges. Yachting is recognized as a minor sport.

Class Organization and Activity

Each of the classes in the Day Colleges elects its officers and carries on activities as a class. Dances are sponsored by the classes at regular periods throughout the year. One of the highlights of the social program is the Junior Promenade, held each spring at one of the Boston hotels.

Seniors plan a number of activities just prior to Commencement.

Convocations

The hour from 12:00 to 1:00 on Wednesdays throughout the year is reserved by the University for convocations and other large meetings. Attendance at convocations is compulsory. Among these meetings are included three all-Day College meetings at Symphony Hall known as the Fall Convocation, Honors Convocation, and Alumni Convocation which bring before the student body some of the ablest and foremost leaders of our country. When the reserved hour is not occupied by a University meeting, concerts, athletic rallies, and class meetings may be held instead. Such meetings are under the direction of the Department of Student Activities.

Fraternities

There are at present nine local Greek letter fraternities chartered by Northeastern University. Each fraternity is provided with a faculty adviser who is responsible for the proper administration of the fraternity house under the rules and regulations established by the faculty. The list of fraternities in the order of their establishment is as follows:

- | | |
|-----------------------|--------------------|
| 1. Beta Gamma Epsilon | 5. Phi Beta Alpha |
| 2. Alpha Kappa Sigma | 6. Phi Gamma Pi |
| 3. Nu Epsilon Zeta | 7. Sigma Phi Alpha |
| 4. Sigma Kappa Psi | 8. Kappa Zeta Phi |
| 9. Gamma Phi Kappa | |

Elected representatives from each fraternity make up an Inter-Fraternity Council, a body which has preliminary jurisdiction over fraternity regulations. Its rulings are subject to the approval of the Faculty Committee on Student Activities.

The Co-operative Plan

What It Is

The Co-operative Plan of Education is founded on the educational philosophy that supervised employment in the occupational field for which a student is training enhances comprehensive learning and vocational adaptation. It utilizes in addition to the usual classroom and laboratory exercises, the practical values of the work-a-day-world environment, thereby enabling the student not only to

become acquainted with certain job skills and operations concurrently with his academic training but also to develop his confidence and capacity to arrive at intelligent conclusions based upon a knowledge of practice as well as of theory.

All Northeastern co-operative curricula are five years in length, comprising a freshman year of three consecutive ten-week terms of academic study followed by four upperclass years on the Co-operative Plan.

How It Works

The Co-operative Plan works in the following manner. Upperclassmen, including both men and women, are divided into two nearly equal groups, one of which is called Division A and the other Division B. Each student is assigned a job with some business or industrial concern. The Division A students start the college year with a term of classroom work, while the Division B students start the year with a term at co-operative work. At the end of that term, the Division A students go out to work with a co-operating firm, while their places in the classrooms are then taken by their alternates, the corresponding Division B students. When the next term has passed the Division A students return to college and the Division B students resume their co-operative work. The alternation of work and classroom study continues throughout the year so that each upperclassman has two terms of ten weeks and one of five weeks at college, two terms — one of ten weeks and one of sixteen weeks — at co-operative work, and a one week vacation.

Similarly, each co-operating employer is thus assured of continuous service of a pair of co-operative students alternating with each other throughout the calendar year. This assurance naturally tends to stabilize employment and encourages the co-operation of employers.

Faculty Co-ordinators

Each student is assigned to a co-ordinator who is responsible for all phases of the co-operative work program for his group of students. He interviews them during the freshman year and discusses with them various vocational objectives and answers such questions as the students may have in regard to the many activities of business and industry. He studies them in the light of their physical condition, scholastic attainment, interests, aptitudes, and other factors bearing upon their qualifications for vocational assignment. These interviews culminate in an agreement between the student and his co-ordinator regarding the co-operative assignment on which the student will be placed. During each of the terms at college immediately succeeding a term at co-operative work, the co-ordinator confers with the student concerning the job experiences acquired and other matters relating to vocational adjustment or personal problems while on the job. The reports of the employer on the achievements and performance of the student are discussed and interpreted in the interest of further co-ordination and more effective learning. In this way the progress of all students is observed and co-ordinated with their college work to the end that maximum values are obtained from their training at Northeastern.

Placement

The co-ordinator visits co-operating firms and arranges with them for the employment of students under his charge. The range of opportunities available

to Northeastern students is wide, including practically all occupational activities for which their academic training, personal attributes, and vocational aptitudes qualify them. In general, the first year of co-operative work can be expected to be of a routine nature through which students may prove their fitness for more responsible work. A job assignment directly related to the student's field of study and vocational training is the prime objective of the co-ordinator. The jobs upon which Northeastern students are employed are in no sense protected opportunities or purely observational assignments. They are regular jobs under actual business conditions and are held in competition with other sources of supply. The only special privilege accorded Northeastern students is that of attending college on the Co-operative Plan and the opportunity to merit by superior performance progressive advancement on the job.

Supervision and Guidance

While the University does not adopt a paternal attitude toward co-operative work, it nevertheless assumes certain responsibilities toward students and co-operating firms. Co-ordinators visit regularly each job to which students in his charge are assigned. He solicits from the employer an oral report upon the student's progress and achievement. This supplements the card report sent to the co-ordinator at the close of each work term. Any adjustments that may have seemed necessary or advisable are arranged at this time. Progress on assignments, schedules of training, advancement and transfers to new responsibilities are discussed and evaluated.

Through a series of co-operative work reports prepared during their working periods, students are led to analyze their jobs and to develop a thoughtful and investigative attitude toward their working environment. A most important phase of co-operative work is the opportunity afforded for guidance by the frank discussion of actual problems encountered on the job. The intimate contact between co-ordinator and student is of great worth in helping the student to get the most value from the co-operative work assignment. While the University endeavors to provide every possible opportunity for its students, it expects them at the same time to take the initiative and to assume the responsibility involved in their individual development. To every student are available the counsel and guidance of the faculty, and every resource at its disposal. But the faculty does not coerce students who are uninterested or unwilling to think for themselves.

The Co-operative Plan is thus designed specifically to provide actual working opportunities which afford the students practical experience, give meaning to their program of study, and train them in reliability, efficiency, and teamwork.

Correlation of Theory and Practice

Co-operating companies employ the students, both men and women, in the various departments of their establishments. The training is thorough. To derive the greatest value from co-operative work the student is encouraged to continue in the employ of the co-operating firm for at least one year after graduation, since certain types of work which would afford valuable experience cannot be made available during the alternating period of work and study. Statistics compiled over a period of many years show that an average of from thirty-five to fifty-three per cent of each graduating class remains with co-operating employers after graduation.

Co-operative Work Reports

The values to be derived from practical experience are further enhanced by required report writing. These co-operative work reports are written during the working periods by all co-operative students. A complete job analysis is required as the first report written on any new co-operative work assignment. Subjects of other reports are selected by the student after conference with the Co-ordinator of Co-operative Work, by whom they must be approved. The reports are designed to encourage observation and investigation on the part of the students and to help them to appreciate more fully the extent and value of their experience.

Co-operating employers are particularly interested in reading these reports before they are submitted to the co-ordinators. This affords an unusual opportunity for the student to place himself directly before top management and have his ideas and accomplishments evaluated periodically. These reports are carefully read by the co-ordinator and are discussed with the student during the following college period. Exceptionally valuable results are obtained from these reports. The value derived must necessarily be directly proportional to the conscientious and intelligent concentration of effort by the student upon this phase of the work.

Co-operative Work Records

Complete and detailed records are kept of the co-operative work of each student. They are based upon reports made by the employer at the end of each working period, upon occasional personal conferences between the employer and the co-ordinator, and upon various evidences of the student's attitude toward all the phases of his co-operative work. It is not possible for the student to secure a degree unless this part of the curriculum is completed satisfactorily. These records of practical experience serve as a valuable reference for future Alumni Placement.

Positions Available

Because of uncertainties of business conditions, as well as other reasons beyond its control, the University cannot and does not guarantee to place students. However, past experience has demonstrated that students who are willing and capable of adapting themselves to existing conditions are almost never without employment except in periods of severe industrial depression.

Earnings

It should be understood that the primary purpose of the Co-operative Plan is training. The rates of pay for students tend to be lower than might reasonably be expected on full-time productive types of jobs such as would ordinarily be available to youth of corresponding age and training, because students are given the privilege of attending college on the Co-operative Plan and because the purpose is to provide the student with the opportunity of advancing on the job concurrently with his academic progress. Frequently this involves transfer, at reasonable intervals, from one department to another of the co-operating company.

Location of Work

It is the policy of the University to assign students to co-operative work within commuting distance of their homes. This is not always possible, however, and at times it may be necessary for students to live away from home in order to obtain satisfactory and desirable co-operative work assignments.

Types of Co-operative Work

In so far as possible students are placed at co-operative work in that general field for which they express preference provided that aptitude, physical ability, temperament, and other personal qualities appear to fit them for this field. Usually students are placed first in those jobs of an organization where they may learn the fundamental requirements of the business.

For example, the first year of a training program in a manufacturing establishment might be as an operator of machines. This provides the opportunity to acquire intimate knowledge of the equipment, methods, and operations of some of the processing departments of raw materials and products in process of manufacture. The second year might be as an expeditor or on assignments with the maintenance and installation department. Such work would require contact with all of the several production and operating departments of the plant and would provide the opportunity for a comprehensive and correlated study of all operations, plant layout, routing of raw, semi-processed, and finished materials — in other words, a perspective view of the interrelationship of departments. By this time, the student will have progressed to the academic stage where “application” courses will be included in the program and the next year of co-operative work might be devoted to testing, inspecting, methods analysis or the like. The last year would be devoted to initial training in that department for which the student was aiming ultimately to qualify. Thus, in the course of a period of four years of co-operative training, the student would have the opportunity to acquire a substantial background in at least some of the functions of the factory administration. This progressive type of training is ordinarily obtained in the employ of one company. A change of company each year usually provides more a change of environment than a progression of experiences.

All types of enterprises employ Northeastern co-operative students. The limitation is determined by the interests and career objectives of the students enrolled at the time. They include engineering firms, manufacturing companies, public utilities, banks, railroads, insurance companies, wholesaling and retailing outlets, hospitals, social agencies, publishers and advertising houses, libraries, development and research organizations, etc. Definite training schedules have been established with several of the co-operating companies. The ultimate objective of such schedules is absorption of the graduates into the permanent employ of the company, although such absorption is based on merit rather than guarantee.

General Information

College Expenses

Tuition and Fees

Freshmen — The charge for tuition, including the University Activities Fee, for all freshmen is \$160 per term, payable as indicated in the schedule below.

Upperclassmen — The charge for tuition, including the University Activities Fee, for all upperclassmen on the Co-operative Plan is \$192 per regular term and \$96 per summer term.

Schedule of Tuition and Fee Payments, 1952-1953

FOR FRESHMEN

DIVISION S	<i>Tuition and Fee</i>	DIVISION N
September 3, 1952.....	\$160.....	November 12, 1952
November 17, 1952.....	160.....	January 26, 1953
January 26, 1953.....	160.....	April 6, 1953

FOR UPPERCLASSMEN (Co-operative Plan)

DIVISION A	<i>Tuition and Fee</i>	DIVISION B
September 8, 1952.....	\$192.....	November 17, 1952
January 26, 1953.....	192.....	April 6, 1953
August 10, 1953.....	96.....	June 15, 1953

FOR UPPERCLASSMEN

(Full-time Plan for Preprofessional Students in Liberal Arts only)

	<i>Tuition and Fee*</i>
September 8, 1952.....	\$192
November 17, 1952.....	192
January 26, 1953.....	192

*These payments cover three ten-week terms of instruction. Students who elect to continue for a fourth term pay an additional \$192 on April 6, 1953.

University Activities Fee

The University Activities Fee is included in tuition and is used for the operation of an extracurricular University program so designed as to meet in the best possible manner the recreational, health, social and cultural needs of the students. This fee supports such activities as dramatics, musical clubs, the Student Union, intramural games and sports, and intercollegiate athletics; includes membership in the Northeastern University Athletic Association and subscription to the *Northeastern News*, the college newspaper. Seniors receive a copy of the year-book called the *Cauldron*, which is financed in part under this fee.

The University Activities Fee also covers the services of the college physician for emergency attention and general medical advice. Minor ailments are treated by the college health officers without additional charge. Any student who shows signs of more serious illness is immediately advised to consult a specialist or return home in order to receive further treatment.

Accident and Sickness Insurance

An excellent low cost accident and illness insurance covering "in-hospital" care is available to all Northeastern University students through a group insurance plan managed by Higham, Neilson, Whitridge, and Reid, Inc., of Boston. The cost of this insurance is \$14 for the calendar year, payable in advance. *Students living away from home are required to participate in the plan*; commuters may do so if they wish. Circulars giving details of the insurance coverage will be sent to all candidates at the time their applications for admission to the University are accepted.

Chemical Laboratory Deposit

(Applies only to students taking chemistry and chemical engineering laboratory work)

Freshmen taking chemistry make a Chemical Laboratory deposit of fifteen dollars (\$15) at the beginning of the year from which deductions are made for breakage, chemicals, and destruction of apparatus in the laboratory.

Upperclassmen taking chemistry or chemical engineering laboratory work make deposits at the beginning of each such term as follows:

Sophomores and Middlers.....	\$10
Juniors.....	20
Seniors.....	15

Any unused portion of this deposit will be returned to the student at the end of the college year. If the charge for such breakage, chemicals, or destruction of apparatus is more than the sum deposited, the student will be charged the additional amount.

Deferred Payment Fee

There will be a \$2.00 deferred payment fee added to all bills which are not paid by the Saturday following the date on which payments fall due. When further extensions of time are given on payments which have been previously deferred, an additional \$2.00 fee may be charged for each extension.

Failure to make the required payments on time, or to arrange for such payments, is considered sufficient cause to bar the student from classes or suspend him from co-operative work until the matter has been adjusted with the Registrar.

Late Registration Fee

A fee of \$5.00 will be charged for failure to register in accordance with prescribed regulations on the dates specified in the college registration bulletins.

Graduation Fee

A fee of fifteen dollars (\$15) covering graduation is required by the University of all candidates for a degree. This fee must be paid before the end of the seventh week of the second term in the senior year.

Payments

All payments should be made at the Central Office which is located on the first floor of Richards Hall. Checks should be made payable to Northeastern University.

Refunds

The University provides all instruction and accommodations on an academic term basis; therefore, *no refunds are granted except in cases where students are compelled to withdraw on account of personal illness or to enter the armed services of the United States.*

Expenses

The following tables, compiled from expense returns submitted by the student body, give an idea of freshman expenditures under ordinary conditions.

Estimated College Expenses for a Freshman

Application Fee.....	\$ 5.00
Tuition and Fees.....	480.00
Chemical Laboratory Deposit.....	15.00
Books and Supplies.....	60.00
Accident and Sickness Insurance (optional for commuters).....	14.00
	<hr/>
	\$574.00

(Engineering students should add approximately \$50 for drawing instruments and equipment.)

Estimated Living Expenses Per Week for a Freshman Residing Away from Home

Room Rent.....	\$ 6.00—\$ 7.00
Board.....	12.00— 16.00
Laundry.....	3.00
Incidentals.....	2.00
	<hr/>
	\$23.00—\$28.00

The figures given above are approximate and may not exactly apply to any one student; however, they will be found to represent fairly well the expense of a freshman who lives comfortably but without extravagance.

Policy on Changes of Program

The University reserves the right to withdraw, modify, or add to the courses offered or to change the order or content of courses in any curriculum.

The University further reserves the right to change the requirements for graduation, tuition and fees charged, and other regulations. However, no change in tuition and fees at any time shall become effective until the school year following that in which it is announced.

Any changes which may be made from time to time pursuant to the above policy shall be applicable to all students in the school, college, or department concerned, including former students who may re-enroll.

Textbooks and Supplies

The Northeastern University Bookstore, located in the basement of Richards Hall, is a department of the University and is operated for the convenience of the student body. All books and supplies which are required by the students for their work in the University may be purchased at the Bookstore.

All students may purchase Day College required textbooks which are for their own use at a ten per cent discount. The ten per cent discount will not apply on equipment, supplies, or novelties. It is the policy of the Bookstore, however, to stock these materials and to sell them at the lowest possible prices.

Part-time Work

Students who find it necessary to accept part-time jobs while attending college may obtain such work through the Director of Co-operative Work.

Students are not justified in assuming that the University will take care of their expenses or guarantee to supply them with work sufficient to meet all their needs.

A student should have available a reserve fund adequate to provide for immediate needs and unexpected contingencies. This should ordinarily amount to at least the first year's tuition plus books and supplies, room rent, and board for several weeks or a total of about \$650.

Grades and Examinations

Examinations

Examinations covering the work of the term are usually held at the close of each term. Exceptions may be made in certain courses where, in the opinion of the instructor, and with the approval of the Dean of the College concerned, examinations are not necessary.

Condition Examinations

Condition examinations are usually given once each year for each division. The charge is three dollars (\$3.00) for each condition examination.

The responsibility for the removal of a condition rests with the student, who is required to ascertain when and how the condition can be removed.

Special Final Examinations

Students who have been given permission to make up missed final examinations will be charged a single fee of \$5.00 covering all of the examinations missed during a given final examination period.

Senior Condition Examinations

No condition examinations in last term senior courses are offered at the end of the last term. This means that a failure in a last term senior course cannot be made up before Commencement.

Grades

A student's grade is officially recorded by letter, as follows:

- A superior attainment
- B above average attainment
- C average attainment
- D lowest passing grade, poor attainment (the faculty will accept only a limited amount of grade D work toward the Bachelor's degree)
- F failure, removable by condition examination
- FF complete failure, course must be repeated in class
- I incomplete, used for intermediate grades only to signify that the student has not had time to make up work lost through excusable enforced absence from class
- L used in all cases of the removal of a failure by condition examination or by attendance at summer term
- WP Withdrew from course — passing
- WF Withdrew from course — failing

A student who does not remove a condition before that course is again scheduled, a year later, must repeat the course unless excused by special action of the Executive Committee. A condition in more than one subject may involve the loss of assignment to co-operative work.

The responsibility for the removal of a condition rests with the student, who is required to ascertain when and how the condition can be removed.

Dean's List

A Dean's List, issued at the end of each term, contains the names of upperclass students who have a 3.0 weighted average in all subjects with no grade below C during the preceding period. Freshmen who met the same standards in their work are included on a Freshman Honor List. No student subject to disciplinary action is eligible for either list.

Reports on Scholastic Standing

Reports for all students are issued at the end of each grading period. Questions relative to grades are to be discussed with the student's faculty adviser.

Students are constantly encouraged to maintain an acceptable quality of college work. Parents and students are always welcomed by the college officers and faculty advisers for conference upon such matters.

Parents or guardians will be notified whenever students are advised or required to withdraw from the University. If parents so request, report cards will be sent to them instead of to the student.

Reserve Officers Training Corps

Men students in the College of Liberal Arts, the College of Engineering, and the College of Business Administration may elect the R.O.T.C. basic training if they are physically qualified. Engineer and Signal Corps units are maintained at the University. Students who have successfully completed the two year basic program may elect the advanced R.O.T.C. course which extends over the final three years of the five-year co-operative curricula leading to the baccalaureate degree. See page 189 for details of the programs.

General Conduct

Conduct

It is assumed that students come to the University for a serious purpose and that they will cheerfully conform to such regulations as may from time to time be made. In case of injury to any building or to any of the furniture, apparatus, or other property of the University, the damage will be charged to the student or students known to be immediately concerned; but if the persons who caused the damage are unknown, the cost for repairs may be assessed equally upon all the students of the University.

Students are expected to observe the accepted rules of decorum, to obey the regulations of the University, and to pay due respect to its officers. Conduct inconsistent with the general good order of the University or persistent neglect of work may be followed by dismissal; if the offense be a less serious one, the student may be placed upon probation. The student so placed upon probation may be dismissed if guilty of any further offense.

It is desired to administer the discipline of the University so as to maintain a high standard of integrity and a scrupulous regard for truth. The attempt of any student to present any work which is not his or her own or to pass any examination by improper means, is regarded as a most serious offense and renders the offender liable to immediate expulsion. The aiding and abetting of a student in any dishonesty is also held to be a grave breach of discipline.

Scholastic Year for Seniors

Seniors of either division who are candidates for a degree in the current year must have completed all academic work, class assignments, theses, regular and special examinations, before twelve o'clock noon of the Saturday next following the close of recitations for seniors.

Attendance

Students are expected to attend all exercises in the subjects they are studying unless excused in advance.

No cuts are allowed. A careful record of each student's attendance upon class exercises is kept. Absence from regularly scheduled exercises in any subject will seriously affect the standing of the student. It may cause the removal of the subject or subjects from the student's schedule.

Laboratory work can be made up only when it is possible to do so during hours of regularly scheduled instruction.

Absences from exercises immediately preceding or following a recess are especially serious and entail severe penalties.

Attendance at all mass meetings of the student body is compulsory. Exceptions to this rule are made only when the student has received permission from the Director of Student Activities previous to the meeting from which absence is desired.

Student Housing

Housing Regulations {Men}

The University does not maintain dormitories for men and cannot guarantee housing accommodations to students who live away from home, but does endeavor to exercise due consideration and care for the students' welfare while they are in residence. This necessitates the adoption of the rules and regulations presented herewith.

1. The Registrar's Office will assist students in obtaining suitable housing. Whenever possible a student should try to make arrangements for housing several days in advance of registration.
2. Students may inspect rooms suggested to them before definitely renting them. After a student has decided to take a room obtained through the assistance of the Registrar's Office, he must notify that office as soon as possible.
3. All students who are assisted in finding rooms by the Registrar's Office must retain the room for the period of their residence unless prior permission to change has been granted by the Registrar.
4. Students are not permitted to live in unsupervised quarters. Under no conditions are groups of students permitted to lease apartments or houses.

5. Students are not permitted to engage living quarters without prior approval of the Registrar. Those violating this rule will be required to give up such rooms immediately and will be assisted by the Registrar's Office in obtaining other quarters.

Rooms in the residence area of the Huntington Avenue Branch of the Boston Y.M.C.A. may be secured only through the Department of Housing Services of the Y.M.C.A. The applicant must present himself in person to a representative of the Department before assignment will be made. Applicants are advised to write the Department of Housing Services of the Huntington Avenue Branch, 316 Huntington Avenue, Boston, Massachusetts.

Fraternity Housing {Men}

Certain fraternities provide excellent opportunities for room and board for men at reasonable rates. Information regarding these housing facilities may be obtained from the Registrar.

Housing for Women

The Marlborough Women's Residence, under the supervision of a house-mother, is maintained by the University at 428 Marlborough Street, Boston. Board and room is provided at reasonable rates. Information regarding this Residence may be secured from Miss Prudie R. Moore, Assistant Director of Admissions.

Women students living away from home are required to live in the Marlborough Women's Residence unless other arrangements are approved in advance by the Dean of Women.

Freshman Counseling

Freshman Orientation Period

In order that freshmen may be ready to pursue their academic work with greater composure and be somewhat acclimated before the beginning of scholastic work, three or four days prior to the first term are devoted to a freshman orientation period. All freshmen are required to attend all exercises at the University scheduled during the orientation period.

Freshman Orientation Class

All freshmen attend an orientation class once each week for the first twenty weeks. This class is designed to instruct the student in the traditions, activities, and procedures of the University. Time is devoted to the proper methods of study for success in college and stress is placed on attitudes for success in later life. About a third of the classes are devoted to techniques and procedures of work under the Co-operative Plan.

Physical Examination

All freshmen receive a physical examination at the University during the orientation period. All students are expected to report promptly at the appointed

time for examination. Those who fail to appear at the appointed time will be charged a special examination fee of two dollars (\$2.00).

Freshman Counselors

At the time of matriculation each freshman is assigned to a personal adviser, a member of the faculty, who serves as an interested and friendly counselor during the perplexing period of transition from school to college. The aim of the freshman advisory system is primarily to guide students through their first year. General counseling is under the direction of the Dean of Freshmen and the Dean of Students, assisted by a clinical psychologist, who handles the diagnosis and remedial treatment of difficult problem cases. Direct counseling of women students is under the supervision of the Dean of Women.

Individual Attention to Freshmen

Attention is given not only to the scholastic problems of the student, but also to personal problems in which advice is needed and desired. The aim is to help the student to the fullest possible personal development.

The college records of all students are periodically analyzed in the light of what may reasonably be expected from them in view of their previous school record, their scores on psychological tests, and all other factors in their situations. If they are not doing their best work, investigations are made to determine and eliminate the causes.

Educational Guidance

The Dean of Students Office is prepared through its testing and general information facilities to provide guidance for students who are uncertain about their educational objectives. While the service is restricted to students registered at the University, it is available throughout the academic year to any regularly enrolled student who applies for it.

Scholarships, Prizes, and Awards

Requests for Freshman Scholarships should be on file with the Director of Admissions not later than May 1 of the current year.

Trustee Scholarships

Established in 1928 by the Board of Trustees of Northeastern University. Each year the University grants in the three Day Colleges full and partial tuition scholarships to entering freshmen who have demonstrated throughout their preparatory or high school course superior scholastic attainment. For additional information relative to these scholarships, communicate with the Director of Admissions.

Charles Hayden Memorial Scholarships at Northeastern University

The Charles Hayden Foundation, created by the will of the late Charles Hayden, an alumnus of the Boston English High School, offers annually memorial scholarships to freshmen at Northeastern University. The scholarships are awarded to "deserving boys" whose parents are unable to finance the entire cost of their education. To be eligible for consideration a student must have

graduated from the English High School or from one of the following high schools in Boston and its metropolitan area: Arlington, Belmont, Boston (Brighton, Charlestown, Commerce, Dorchester, East Boston, English, Hyde Park, Jamaica Plain, Boston Technical, Public Latin, Roslindale, Roxbury Memorial, South Boston), Braintree, Brookline, Cambridge (High and Latin, Rindge Technical), Canton, Chelsea, Dedham, Everett, Lexington, Malden, Medford, Melrose, Milton, Needham, Newton, North Quincy, Quincy, Revere, Somerville, Stoneham, Wakefield, Waltham, Watertown, Wellesley, Weston, Weymouth, Winchester, Winthrop. Full particulars concerning these scholarships may be obtained from the Director of Admissions of Northeastern University.

Dean's List Scholarships

Established in 1929. Annually at the Dean's List Dinner three scholarships of one hundred dollars each, known as the Dean's List Scholarships, are presented to the students with the outstanding records in the sophomore, middler, and junior classes. These scholarships are applicable to the recipients' tuition the first term of the following year.

President's Letter

Established in 1929. At the time of the award of the Dean's List Scholarships a President's Letter is presented to the senior student who leads the seniors in the Day Colleges in scholastic achievement. The letter is a congratulatory one from the President of the University and is a coveted prize.

Sears B. Condit Honor Awards

Established in 1940 through the generosity of Sears B. Condit. In the fall of the year at a University convocation Sears B. Condit Honor Awards, not less than twenty in number, are awarded annually to outstanding students in the upper three classes of the College of Liberal Arts, the College of Business Administration, and the College of Engineering. Each award carries a stipend of not less than one hundred dollars as well as a certificate of achievement.

Boston Society of Civil Engineers Scholarship in Memory of Desmond FitzGerald

Established in 1931 by the Boston Society of Civil Engineers in memory of Desmond FitzGerald, a former president of the Society and an eminent hydraulic engineer with a distinguished record of service. The scholarship is subject to annual renewal. It has been awarded annually since 1931 to an outstanding Northeastern University senior or junior student in the Department of Civil Engineering of the College of Engineering. The presentation is made by the President of the Boston Society of Civil Engineers at a College of Engineering convocation in the spring of the year.

Tau Beta Pi Award

Massachusetts Epsilon Chapter of Tau Beta Pi Association, national honorary society in engineering, offers annually a scholarship of one hundred dollars to the sophomore in the College of Engineering who, during the previous year as a freshman, made the highest scholastic record.

The Sigma Society Award

The Sigma Society, the honorary society of the College of Business Administration, offers annually a scholarship of one hundred dollars to the sophomore in the College of Business Administration who, during the previous year as a freshman, made the highest scholastic record.

The Academy Award

The Academy, the honor society of the College of Liberal Arts, offers annually a scholarship of one hundred dollars to the sophomore in the College of Liberal Arts who, during the previous year as a freshman, made the highest scholastic record.

Omega Sigma Award

The Omega Sigma Society, composed of women students at Northeastern University, offers annually a scholarship of one hundred dollars to the woman student who, by high scholastic attainment and by demonstration of the quality of leadership, has proven herself the outstanding woman student of the year.

Henry B. Alvord Memorial Scholarship in Civil Engineering

Established in 1940 in memory of the late Henry B. Alvord, Professor of Civil Engineering and Chairman of the Department for eighteen years. The award is made annually to a student graduating from an accredited secondary school who has demonstrated superior academic ability and gives promise of succeeding in civil engineering. The grant of two hundred and fifty dollars is made only to an entering freshman who is qualified for and plans to study civil engineering.

William J. Alcott Memorial Award

Established in 1934 by members of the faculty and other friends to perpetuate the memory of William Jefferson Alcott, Jr., a brilliant member of the Department of Mathematics in Northeastern University from 1924 until his death in 1933. The award is made annually from the income of the fund for outstanding scholastic achievement during the preceding year, either in a particular field of interest or for a superior academic record.

Public Speaking Contest

Established in 1922. Each year the University awards \$100 in prizes at Public Speaking Contests for which all upperclass students in the Day Colleges are eligible. The speech content must be original and not over ten minutes in length. The judges base their decision on appropriateness of subject, organization and scope of content, and general manner of delivery. Contestants are selected after a series of preliminary tryouts. The contest takes place before the student body assembled in a general mass meeting.

Annual Freshman Declamation

Established in 1948. Four finalists chosen from the entire Freshman class compete for \$50 in prizes at a special convocation held in Alumni Auditorium. Contestants deliver from memory passages from famous orations or other suitable

selections. Each speaker is limited to seven minutes and is judged on the basis of accuracy of rendition, interpretation, and effectiveness of delivery. The final contest is the culmination of preliminary tryouts in the Freshman English sections followed by highly competitive semi-finals before faculty judges.

Clara and Joseph F. Ford Scholarship Fund

Established in 1947 by friends and employees of Clara and Joseph F. Ford to provide tuition scholarships for worthy, needy, and well-qualified students who have demonstrated a democratic and tolerant spirit and who are well disposed toward people of all creeds and races.

Alumni Award for Professional Promise

Established in 1947 by the Alumni Association of the Day Colleges. This award is presented annually at a University Convocation sponsored by the Alumni of the Day Colleges. The award is made to an outstanding senior who has demonstrated unusual professional promise through his character traits, scholastic achievement, and co-operative work performance.

William Lincoln Smith Scholarship Fund

Established in 1947 by Farnham Wheeler Smith, Class of 1924, Benjamin Lincoln Smith, Class of 1923, Thomas Hollis, Jr., Class of 1941, and other members of the family in honor of Dr. William Lincoln Smith who served long, faithfully, and with distinction as chairman of the Department of Electrical Engineering at Northeastern University. The income from the fund is to be used for an annual scholarship award to a student enrolled in the Department of Electrical Engineering who has demonstrated excellence in some aspect of electrical research or who stands high in his courses or who otherwise exhibits promise of future competence in the field. The award shall preferably be granted to a student who needs financial assistance to continue his college work.

Jewish Vocational Aid Society

The Jewish Vocational Aid Society has established a \$1,000 revolving scholarship loan fund at Northeastern University to be available to upperclass students in the Colleges of Engineering, Liberal Arts, or Business Administration provided the students are taking work which has an acceptable vocational objective. It is possible for a student to receive a scholarship loan up to but not exceeding \$150 in a semester. Students desiring to receive help from this fund should come to the Dean of Students' office, 275 Richards Hall, for further information.

Associated Industries of Massachusetts Scholarships

The Associated Industries of Massachusetts annually awards to Northeastern University several thousands of dollars to be used for scholarships to help sons and daughters of workers in Massachusetts industries who are enrolled in the Day Colleges. The amount of each individual award is determined by a committee comprising the Dean of Students, the Director of Day Colleges, and the Director of Admissions. Primary purpose of the grant is to assist capable students who would otherwise be unable to continue their college education. The scholarships are available to both freshmen and upperclassmen.

The Alumni Association

The 8000 alumni of the Day Colleges are organized to promote the welfare of Northeastern University and to perpetuate the spirit of fellowship among members of the Alumni Association. Headquarters of the Association are in the Alumni Office located in Room 251 of Richards Hall where complete records and addresses of alumni are on file.

The official publication is the *Northeastern Alumnus* which is published quarterly and is sent to all subscribers to the annual Alumni Fund. The Alumni Fund operates similar to the Community Chest. Once each year the alumni are solicited through the Alumni Association. The funds are used to provide an annual gift to the University, finance the activities of the Alumni Association, and publish the *Alumnus*.

Regional Alumni Clubs have been established in Brockton, Chicago, Cleveland, Connecticut, Detroit, Maine, New York, Merrimac Valley, North Shore, Southeastern Massachusetts, Philadelphia, Western Pennsylvania, South Shore, Washington-Baltimore, Western Massachusetts, and Worcester. These clubs meet periodically in their respective centers to discuss matters pertaining to the University and its alumni. Meetings are also held in conjunction with the visits of Northeastern athletic teams to the various club centers.

In addition the Association sponsors the Omega Sigma Alumnae, for the co-ed graduates, and the Varsity Club for alumni interested in athletics. The Varsity Club in turn sponsors the Fall Home Coming Day and Dinner held in conjunction with a football game. At the dinner the Alumni Track Trophy and Varsity Football Trophy are awarded.

The Association presents annually, at the Alumni Convocation, the Alumni Award for professional promise.

The climax of the year's activities is the Alumni Federation Day held in conjunction with the June Commencement. Reunions of various classes are also conducted during Commencement week-end.

The Alumni Association of the Day Colleges is a member of the Alumni Federation, which consists of the Alumni Associations of the Day Colleges, of the School of Business, and of the School of Law.

The organization of the Alumni Association is as follows:

Officers

President

HARLAN P. NEWTON '34

Secretary

ALBERT E. JOHNSON '32

Vice-President

JOHN W. LABELLE '32

Treasurer

JOHN E. VADALA '31

Executive Committee

CONSTANTINE C. N. COLLATOS '41

CHARLES E. RICE '35

LAURENCE R. CLARKE '27

ROBERT J. FIELDING, JR. '39

EDMOND L. SWEENEY '16

JOSEPH M. CHRUSZ '37

*Council*JULIUS C. SANTIS '21, *Chairman, Alumni Council*

HENRY L. KENNEDY '19	NORMAN W. KNOX '38
JULIUS C. SANTIS '21	JOHN W. WILSON '39
ARTHUR E. HARDING '22	ERNEST BARRASSO '40
HENRY BRASK '23	ROY L. PARSONS, JR. '41
ELTON O. STEARNS '24	THOMAS A. LIKOS '42
FREDERICK P. STERN '25	JAMES F. JEFFERSON '43
ROGER DiCICCO '26	THOMAS F. MAHONEY '44
CHARLES L. RENKER '27	MERLE I. LOCKE '45
EDGAR P. CROWELL, JR. '28	DAVID E. HIGGINBOTHAM '46
V. GEORGE OHANESIAN '29	THOMAS L. McDONOUGH '47
DANIEL F. O'LEARY '30	FRANK LAMBERT, JR. '48
ROBERT B. MATSON '31	URSULA ULLRICH DILLON '49
STEWART H. PRESPER '32	CONSTANTINE G. COCKINOS '50 A
WILLIAM H. SHIPP '34	LLOYD M. MARTIN '50 CFT
STANLEY W. KRAMER '35	JAMES R. REID '50 C
EUGENE J. VOGEL '36	DOUGLAS R. BRIGGS '51
HENRY F. ABBRUZZESE '37	

Director of Alumni Relations

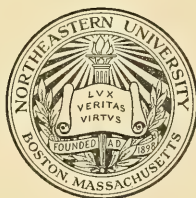
RUDOLF O. OBERG '26

NORTHEASTERN UNIVERSITY

COLLEGE OF
LIBERAL ARTS

Admission Requirements and Courses of Study

1952-1953



(COEDUCATIONAL)

BOSTON 15, MASSACHUSETTS
JANUARY, 1952

THE COLLEGE OF LIBERAL ARTS

Aims

IN PROVIDING the means to a modern liberal education the College of Liberal Arts of Northeastern University has a threefold objective: first, the development of intellectual capability; second, the development of a well-rounded personality; and third, preparation for a vocation.

Intellectual capability rests upon the foundation of a sound general education. Through the required and elective courses of all curricula, students are guided toward a mastery of the leading ideas, significant facts, and the habits of thought and methods of work in the areas of language, natural science, social science, and the humanities. With this training the student will better understand the world and society in which he lives, appreciate more fully the basic values upon which civilization and culture rest, and perceive and accept his responsibilities as an active participant in social groups — the family, the community, the nation, and the world. At the same time the student is aided in the development of a resourceful and independent mind, the ability to use as well as to accumulate knowledge, and the awareness of his mental strengths and weaknesses.

The College of Liberal Arts endeavors to aid each student in attaining the goal of an emotionally balanced, well-rounded personality. Through its academic, extracurricular, and co-operative work programs, students are provided experiences which will be conducive to the development of strength of character and a sense of personal responsibility — including such personal qualities as self-reliance, integrity, perseverance, and the ability to work with others.

Since liberal arts colleges were originally established for the purpose of training for certain professions, the College of Liberal Arts holds that there is no inconsistency between a truly liberal education and preparation for a vocation. Today it is widely accepted that a liberal education must prepare both for the art of living and the obtaining of a living. Through its academic program coupled with co-operative work experience the College of Liberal Arts aims at providing young men and women with a sound training either for further graduate study or for immediate entrance upon graduation into some vocation.

Methods

To enable each student to plan a college program in keeping with his own interests and aptitudes, a wide range of electives is offered. This does not mean that students are free to elect courses indiscriminately, for if they are to obtain a liberal education they must have training in several basic fields. Therefore, a definite series of basic courses in each curriculum is required by the faculty. These required courses are largely concentrated in the first two years of the curriculum.

Through a comprehensive guidance program students are directed in their selection of courses so that they obtain the proper preparation for their intended vocations. Specialization in a major field is emphasized during the latter part of the curriculum and is facilitated by the opportunity for electing certain courses in the College of Engineering and the College of Business Administration.

Through the Northeastern plan of co-operative education for upperclassmen, the student makes early contact with actual working conditions and profits by the wholesome experience of earning at least part of the money to defray college expenses. Viewed as a whole, then, the college years surround the student not with an artificial atmosphere of cloistered scholarship but with an environment very close to that which he or she will enter after graduation, and thus tend to make for more ready employment, an essential element of vocational competence.

Evening Division

In order to provide employed men and women with opportunities in liberal arts education, a number of the regular courses are offered during the evening. These courses are designed for three groups of young men and women who are secondary school graduates and qualified for entrance to the college: (1) those who wish to prepare for admission to the School of Law; (2) those who wish to pursue a cultural program leading to the degree of Associate in Arts; (3) those who do not wish to follow a specific program but desire to take courses to improve their cultural background.

The evening courses are arranged in a three-year program which meets one-half the credit hour requirement for the A.B. or S.B. degree and leads to the degree of Associate in Arts.

Preparation for a Career

The curricula in the College of Liberal Arts afford not only a broad cultural training but also the necessary foundation for a wide range of vocations for both young men and young women. Some of the career opportunities open to the graduates of the College of Liberal Arts together with the academic programs needed are indicated below and in the pages which follow.

Art — The curriculum in art is designed to provide a liberal education in the history of art, and to train men and women for professional work in industrial drafting and tracing, advertising design, commercial art, or teaching, dependent upon the nature of the elected program. An appreciation of art is developed through progressive courses in art history which includes studies of materials, techniques, and methods used by master craftsmen. Paralleling these academic studies, courses in applied art provide adequate training for employment in engineering drafting rooms or commercial art studios. Elective courses in education provide fundamental training for teaching careers.

Business — The value of a liberal arts preparation for a business career is clearly shown by the fact that a very large proportion of all graduates of liberal arts colleges enter business. Within recent years there has arisen an increasing demand for liberal arts graduates by the largest and most progressive corporations in the country. For their training programs in manufacturing, merchandising, selling and other fields many companies are seeking adaptable young men and women with the breadth of background of a liberal arts education.

Students planning either to go to a graduate school of business administration or to enter business directly upon graduation should major in economics and should elect courses in English, government, and psychology. A limited number

of specialized courses in the College of Business Administration such as advertising, business law, finance, industrial management, insurance, investments, marketing, and merchandising may be taken by students who have had the necessary prerequisites.

Biological Sciences — Students who major in biology can arrange programs which will lay the foundation for the following careers: teaching, dentistry, medicine (see premedical curriculum), veterinary medicine, public health, sanitation and laboratory methods; research in biology with universities, private research institutions, and governmental agencies under state and federal control; agriculture; and professional work in zoology and its applied fields such as fisheries, animal husbandry, and biology survey. Graduate study is essential for most of these careers.

Chemistry — Chemistry is establishing status as a profession as shown by the action of the American Chemical Society in laying down specifications for approved undergraduate training in chemistry. Students who choose a chemistry major at Northeastern, a program accredited by the American Chemical Society, will be prepared upon graduation to become junior chemists in industrial, commercial, or governmental chemistry laboratories. The same program provides a thorough foundation for graduate study in chemistry.

Dentistry — The minimum requirement for admission to dental schools is two years of preliminary study in an approved college. Since the requirements of individual dental schools vary, students should familiarize themselves with the specific requirements of the schools in which they are interested. For most dental schools a candidate for admission must offer at least one year of work in English, physics, and biology, and one and one-half years of work in chemistry, including organic chemistry.

Predental students at Northeastern will be able to meet these requirements by taking the two-year predental program. A third year may be taken by those students who desire to obtain a broader educational background.

Government Service — Government service is a very comprehensive term since the numerous activities of modern government require all types of trained workers. For more and more of these positions a college education is essential as shown by the fact that only college graduates are eligible to take many civil service examinations in such fields as biology, business analysis, economics, editing, fiscal analysis, mathematics, physics, psychology, social work, sociology, and statistics.

The distinctive governmental career field is that of public administration since the need for college trained personnel in administrative governmental posts of all types, political or nonpolitical, is being increasingly recognized. While graduate training is desirable, an undergraduate program with a major in history-government and a minor in economics will provide the necessary foundation for a career in government service at home or abroad.

Journalism — Many of the nation's leading editors now advise students preparing for a career in journalism to obtain a broad liberal arts education rather than to concentrate on specific training in the routines of journalism in their undergraduate programs. It should be observed that opportunities in journalism

today are not restricted to the urban or rural newspaper fields. Publishing houses, trade journals, house organs, advertising departments and agencies, and the various types of public relations work need college graduates with the same basic training.

Students who desire to enter journalism should choose the English-journalism major with a minor in economics, history, or government. They may elect courses in advertising in the College of Business Administration.

Law — Liberal Arts (Combined Program) — See page 64.

Library Work — Professional training for library work now demands at least one year of graduate study in a library school following a broad undergraduate foundation in liberal arts. While a major in English is usually advised, many opportunities are available for those who have concentrated in other fields.

Mathematics — A recent bulletin of the United States Department of Labor lists the following occupational titles in fields other than teaching for those who have majored in mathematics: Actuarial statistician, actuary, computer, mathematical aide, mathematical assistant, mathematician, statistical clerk, and statistician. Opportunities for such positions are to be found in government service, insurance companies, and industry. For some types of mathematical work graduate study is necessary.

Law — Under the new requirements for admission to accredited law schools effective in the fall of 1952 prelegal students in the College of Liberal Arts have a choice of two plans for qualifying for entrance into the Northeastern University School of Law. Students intending to enter other law schools should ascertain their admission requirements which differ in some instances.

Plan I Students take the curriculum outlined on page 75 which requires two full-time years and represents one-half the requirements for the A.B. degree. These students then take a four-year program in the School of Law to qualify for the LL.B. degree.

Plan II Students attend the College of Liberal Arts for a third year of three ten-week terms, thus completing three-fourths of the requirements for the A.B. degree. These students then take a three-year program in the School of Law to qualify for the LL.B. degree, but also receive the A.B. degree from the College of Liberal Arts after the first year in the School of Law under the Combined Program described on page 64.

It should be noted that the faculty of the School of Law strongly recommends Plan II as providing the most desirable training for the legal profession. Both the above plans refer to the regular day programs of the School of Law since the evening programs require additional time.

Medical Technology — To be eligible to take the examination for certification as a Medical Technologist by the Registry of Medical Technologists of the American Society of Clinical Pathologists a candidate must have completed a two-year college program including specified work in biology and chemistry prior to taking technical training in medical technology for at least twelve con-

secutive months in a school of medical technology approved by the Council on Medical Education and Hospitals of the American Medical Association.

The two-year program on page 77 has been approved by the Registry of Medical Technologists as meeting their requirements for basic college preparation although some hospital schools of medical technology require a third year of college preparation. Qualified candidates then enter a school of medical technology in an approved hospital and receive their technical training in biochemistry, hematology, bacteriology, parasitology, histology, serology, and other subjects. Upon the successful completion of this work the candidate is eligible to take the examination for certification as a Medical Technologist (M.T.) by the Registry of Medical Technologists, recognized as the authoritative qualifying body for this field.

Medicine — In order to be eligible for admission to a medical school according to the Committee on Education of the American Medical Association, a candidate must have attended an approved college and have included certain specific work in his program. The minimum course requirements include year courses in each of the following fields: English, inorganic chemistry, organic chemistry, physics, and a foreign language. Since some medical schools impose additional requirements, premedical students should obtain full information from the medical school of their choice about the courses which must be offered for admission.

The premedical curriculum listed on page 76 will enable students to meet all the above standard requirements. The electives make it possible to obtain any particular additional courses required by some medical schools.

Students are cautioned that the successful completion of the required premedical program by no means ensures admission to a medical school. Since most medical schools have far more applicants than they can admit, standards of selection are most rigorous and take into consideration not only the quality of the applicant's academic record and instructor's recommendations but also his or her medical-aptitude test score and the results of a personal interview.

Ministry — Preparation for the ministry today requires a theological school training following graduation from an approved college of liberal arts. The American Association of Theological Schools states that the appropriate foundation for a minister's later professional studies lies in a broad and comprehensive college education and that the normal place for a minister's professional study is the theological school. Recommended fields of study include English, economics, education, government, history, foreign languages, one of the natural sciences, philosophy, psychology, and sociology.

While students who major in English, economics, psychology, or sociology will be able to arrange programs meeting the above recommendation, it is urged that preministerial students obtain counsel from the dean of the theological school of their choice since some schools have further specific requirements.

Physics — As a result of the rapid developments in physics in recent years, there are increasing opportunities in applied physics on the technical staffs and in the research laboratories of the electrical, electronics, radio, optical industries, and in many governmental research agencies for the liberal arts graduate who has majored in physics. Graduate study is necessary for those who plan on research in pure physics.

Psychology — There is an increasing demand for persons trained in psychology in a wide range of occupational fields. In the field of education the demand is expanding for school psychologists at the grade school level and for guidance workers and vocational counselors at the junior and senior high school level.

In the field of business and industry increasing numbers of psychologists are being employed in marketing research, in advertising, and in personnel departments. In state and federal governmental agencies clinical psychologists are employed in hospitals for the mentally ill, in child guidance clinics, in employment offices, and as research workers on problems relating to cultural relations with other countries, to propaganda, and to education.

A large number of these positions require that the applicant have at least one year of graduate work and not a few require that he or she have a Ph.D. degree.

Secretarial Work — Today there are excellent opportunities for college graduates, regardless of their majors, who can qualify for secretarial positions. A sequence of elective courses in secretarial studies is open to all students in the College of Liberal Arts who wish to prepare themselves for this avenue to advancement.

Social Service — Students who major in sociology lay the undergraduate foundation for numerous phases of work with either private or public agencies in the social service field, such as social case work, family welfare, child welfare, probation and parole, juvenile court, and settlement work, and relief administration. At least one year of graduate study in a school of social work is essential for those who desire full professional status.

Statistical Work — The growing emphasis upon statistics in business, education, social service, and government has opened a new career field for the student who majors in mathematics and obtains preparation in statistics. Similar training is necessary for students who wish to enter the actuarial field.

Teaching (Secondary School) — While a major in education is not offered in the College of Liberal Arts, a minor in this field is available which meets the new requirements of the Department of Education of the Commonwealth of Massachusetts for teachers in secondary schools. Students from other states should familiarize themselves with the requirements of their own state, as these requirements are constantly being increased.

Most small secondary schools, in which the graduate must begin, expect teachers to be able to teach at least two, and often three, subjects. Consequently programs should provide for the common combinations of related subjects. A major should be selected from the following fields: biology, chemistry, English, history-government, modern languages, or mathematics-physics.

Students who desire to become teacher-coaches may minor in physical education, provided they elect the required courses in education.

Teaching (College) — Students who plan to enter the college teaching profession will find that each of the major programs affords an excellent preparation for graduate study in the leading universities of the country. Since graduate schools usually require a reading knowledge of French or German, frequently both, students should elect adequate work in these languages. Seminar courses and thesis work are strongly recommended for their training in research techniques.

Admission Requirements

Applicants for admission to the freshman class must qualify by graduation from an approved course of study in an accredited secondary school, including prescribed subjects listed below.

Applicants are not required to take entrance examinations in high school subjects, but all candidates for the freshman class are asked to come to Northeastern University to take scholastic aptitude tests.

In the event that the distance to Boston from an applicant's place of residence is great, the Committee on Admissions is willing under certain conditions to make a decision on test results submitted by the College Entrance Examination Board.

Prescribed Subjects for Admission *College of Liberal Arts*

Fifteen units are required for admission and must include three units (four years) in English and at least six units in foreign languages, mathematics, science, and/or social studies except that students planning to major in a science must present two units in algebra and one unit in plane geometry, and those who are planning to major in chemistry, mathematics, or physics must also present one unit in physics. The remaining units are elective from other secondary school subjects which are acceptable to the Committee on Admissions.

A unit is a credit given to an acceptable secondary school course which meets at least four times a week for periods of not less than forty minutes each throughout the school year.

Other Requirements

These formal requirements are necessary and desirable in that they tend to provide all entering students with a common ground upon which the first year of the college curriculum can be based. But academic credits alone are not an adequate indication of a student's ability to profit by a college education. Consequently, the Department of Admissions takes into consideration a student's interests and aptitudes in so far as they can be determined, capacity for hard work, attitude toward classmates and teachers in high school, physical stamina, and most important of all, character. In this way the University seeks to select for its student body those who not only meet the academic admission requirements but who also give promise of acquitting themselves creditably in the rigorous program of training afforded by the Co-operative Plan and of becoming useful members of society.

Personal Interview

A personal interview is always preferred to correspondence, and parents are urged to accompany the applicant whenever this is possible. Effective guidance depends in large measure upon a complete knowledge of a student's background and problems. Parents invariably are able to contribute information that aids the admissions officer in arriving at a decision.

Applicants who come from a distance are advised to write in advance to see if it is possible to arrange for an interview and for the required scholastic aptitude tests on the same day. The examinations are scheduled only on Saturday mornings, at dates to be announced.

Office hours are from 9:00 A.M. to 4:00 P.M. daily; Saturdays to 12:00 M. The Department of Admissions will interview applicants on Wednesday evenings but by appointment only.

Application for Admission

Each applicant for admission is required to fill out an application blank stating previous education, as well as the names of persons to whom reference may be made.

A fee of five dollars (\$5.00) is required when the application is filed. This fee is nonreturnable.

The last page of this catalog is in the form of an application blank. It should be filled out in ink and forwarded with the required five-dollar fee to Director of Admissions, Northeastern University, Boston 15, Massachusetts. Checks should be made out to Northeastern University.

Upon receipt of the application, properly filled out, the University secures the references and secondary school record. Applicants having satisfactory secondary school records are notified to report at the University to take special scholastic aptitude tests. As soon as possible after the Committee on Admissions has reviewed the results of these tests a report of status with respect to admission will be sent to each candidate.

Early filing of applications is recommended.

The University reserves the right to place any entering student upon an indefinite trial period.

Tuition Deposit

Applicants accepted for admission must upon request pay a nonreturnable tuition deposit of twenty-five dollars (\$25) as evidence of their bona fide intention to matriculate.

Registration

Freshmen will register at the University on Wednesday, September 3, 1952, and Wednesday, November 12, 1952. Students are not considered to have met the requirements for admission until they have successfully passed the required physical examination.

Advanced Standing

Students transferring from approved colleges will be admitted to advanced standing provided their records warrant it, and they are approved by the Co-operative Work Department in an interview scheduled in the late spring or summer previous to registration in September. Whenever a person enters with advanced standing and later proves to have had inadequate preparation in any prerequisite subjects, the faculty reserves the right to require the student to make up such deficiencies.

Applicants seeking advanced standing should arrange to have transcripts of their previous college records forwarded with their initial inquiry.

Outline of Freshman Courses

The first year is a period of full-time study during which the student must demonstrate fitness for the program which has been elected. The Co-operative Plan of training on the job begins with the second year. Students who are unsuccessful in the basic courses of the freshman year will not be permitted to continue with their advanced program, but will be advised to change their goal and type of training. In some instances this will mean change to another curriculum at Northeastern; in others, withdrawal from the institution. *The freshman courses are so arranged as to permit change of objective during or at the end of the first year with a minimum loss of time.*

Requirements for Graduation

Degrees

The College of Liberal Arts awards the Bachelor of Arts degree to qualified candidates who have majored in art, economics, English, history and government, psychology, or sociology.

The Bachelor of Science degree is awarded to qualified candidates who have majored in biology, chemistry, mathematics, physics, or have taken the pre-medical curriculum.

Quantity Requirements

Candidates for a degree must have completed one of the curricula listed on pages 65-79. Each curriculum normally provides for not less than 208 credit hours of work, including at least 48 credit hours of advanced work in a major field, and at least 24 credit hours of prescribed or elective upperclass courses in a related minor field.

All candidates for a degree must have satisfactorily completed in college one year of a modern foreign language above the elementary level.

Students who undertake co-operative work assignments must meet the requirements of the Department of Co-operative Work before they become eligible for their degrees.

No student transferring from another college or university is eligible to receive a degree until at least one year of academic work immediately preceding graduation has been completed at Northeastern.

R.O.T.C. Students

All physically qualified male freshmen may elect R.O.T.C. if they so desire. Students accepted for the R.O.T.C. will not be required to take Physical Training in Terms 1, 2, 3, and will be permitted to substitute advanced R.O.T.C. courses for certain upperclass academic work as approved by the Dean up to a maximum of 12 credits.

Quality Requirements

Of the 208 or more credit hours required for a degree, at least 135 credit hours must have been completed with a grade of C or better.

Graduation with Honor

Candidates who have achieved distinctly superior attainment in their academic work will be graduated with honor. Upon special vote of the faculty a limited number of this group may be graduated with high honor or with highest honor. Students must have been in attendance at the University at least three years before they may become eligible for honors at graduation.

Graduate Study

Graduate work in biology and chemistry is offered to properly qualified students desiring to undertake advanced study leading to the degree of Master of Science. Candidates for admission to this program must be high ranking students who have completed, or will have completed prior to admission to the graduate program, the requirements for the Bachelor of Science degree with major in biology or chemistry at an institution of recognized standing. At the present time the program is limited to teaching fellows at Northeastern University who are required to devote half time to instruction at the undergraduate level. The requirements for the Master's degree should be completed in two years.

Requirements for the Master of Science Degree

Candidates for the degree of Master of Science in biology or chemistry must have completed satisfactorily 48 credit hours of study beyond that required for the Bachelor's degree. Of these, at least 32 credit hours must be graduate courses in the major field, these credits including formal course work and a thesis. Sixteen credits may be earned in a graduate seminar, advanced undergraduate courses approved by the head of the department concerned, or a combination of both. Graduate students must obtain a grade of B or better in any undergraduate course taken for credit.

The thesis subject must be approved by the head of the department within four weeks of the date of registration for graduate study. Theses must be completed in the major field of study at least four weeks in advance of the date on which the degree is to be awarded. After the thesis has been completed, a written or oral comprehensive examination may be required at the discretion of the department concerned.

Individual programs of study must have the approval of the Director of Graduate Study, who also acts as registration officer for graduate students.

Curricular Requirements

The following fields of study are approved as major fields in the College of Liberal Arts: art, biology, biology-chemistry, chemistry, economics, English, English-journalism, history and government, mathematics, physics, premedical, psychology, and sociology. In addition, two-year programs are approved for pre dental, pre legal, and premedical technology students.

Students may elect their minor fields after consultation with their faculty advisers. In addition to the major fields listed above, the following subjects are available as minors: education, French, German, philosophy, physical education, and Spanish.

The required courses in each curriculum are indicated on the following pages. Upon petition to the faculty, substitutions may be permitted in exceptional cases when required by the specific vocational objective of the student.

During the last year students in all curricula are required to attend a series of meetings designed to prepare them for placement in specific positions in their chosen vocational field. Under expert guidance each student prepares a complete personnel record, studies himself or herself and the opportunities that are open, and works out a complete campaign for obtaining after-graduation employment.

Combined Program Liberal Arts and Law

The combined curriculum in the College of Liberal Arts and the School of Law enables students to reduce by one year the time ordinarily required for obtaining the A.B. or S.B. and the LL.B. degree. Students who have completed before entering the School of Law a total of 156 credit hours of academic work, of which at least 104 must have been earned in the Northeastern University College of Liberal Arts, and who have fulfilled all other graduation requirements, will receive the A.B. or S.B. degree upon the satisfactory completion of the full first year program in the Day Division of the School of Law. Students who enter the Evening Division of the School of Law will be eligible for the first degree upon satisfactory completion of the full equivalent of the first year of the day Law School program.

In both instances the first degree will be conferred at the next Commencement following determination of eligibility for the first degree.

Four-Year Plan

Except for Pre-professional Programs, all curricula in the College of Liberal Arts are normally organized on the five-year Co-operative Plan which is the distinctive feature of Northeastern University.

However, in all majors except chemistry and physics, qualified students may be excused from the Co-operative Plan by the Dean and may complete the requirements for the degree in four years.

Curriculum in Art

FIRST YEAR**

TERM 1						TERM 2						TERM 3					
No.	Course	Cl.	Lab.	Pr.	Cr.	No.	Course	Cl.	Lab.	Pr.	Cr.	No.	Course	Cl.	Lab.	Pr.	Cr.
-31	English I	3	0	6	3	30-02	English I	3	0	6	3	30-03	English I	3	0	6	3
-11	Hist. Civ.	4	0	8	4	27-12	Hist. Civ.	4	0	8	4	27-13	Hist. Civ.	4	0	8	4
-01	Am. Gov. or	3	0	6	3	22-02	Am. Gov. or	3	0	6	3	22-03	Am. Gov. or	3	0	6	3
-21	Basic Math.	3	0	6	3	14-22	Basic Math.	3	0	6	3	14-23	Basic Math.	3	0	6	3
-11	Gen. Biol.	2	3	4	3	10-12	Gen. Biol.	2	3	4	3	10-13	Gen. Biol.	2	3	4	3
	Mod. Lang.						Mod. Lang.						Mod. Lang.				
	Elective	3	0	6	3		Elective	3	0	6	3		Elective	3	0	6	3
-10	Phys. Tr.	0	2	0	0	16-11	Phys. Tr.	0	2	0	0	16-12	Phys. Tr.	0	2	0	0
		15	5	30	16			15	5	30	16			15	5	30	16

SECOND YEAR

TERM 4*					TERM 5					TERM 6				
-04 Int. to Lit.	5	0	10	2½	30-33 Eng. Lit.	4	0	8	4	30-34 Eng. Lit.	4	0	8	4
-14 Hist. Civ.	4	0	8	2	27-01 Hist. of					27-02 Hist. Early Ch.				
-14 Gen. Biol.	2	3	4	3	Ancient Art	4	0	8	4	& Med. Art	4	0	8	4
Mod. Lang.					27-30 El. Drawing	2	4	6	4	27-31 Pict. Draw.	2	4	6	4
Elective	3	0	6	1½	Mod. Lang.					Mod. Lang.				
					Elective	4	0	8	4	Elective	4	0	8	4
	14	3	28	9		14	4	30	16		14	4	30	16

THIRD YEAR

TERM 7*					TERM 8					TERM 9				
Elective	8	0	16	4	27-03 Hist. Ren. Art	4	0	8	4	27-04 Hist. Eur. Art	4	0	8	4
Elective	8	0	16	4	27-32 Fr. Sketching	0	6	6	4	27-33 Th. of Color	0	6	6	4
					Elective	4	0	8	4	Elective	4	0	8	4
					Elective	4	0	8	4	Elective	4	0	8	4
	16	0	32	8		12	6	30	16		12	6	30	16

FOURTH YEAR

TERM 10*					TERM 11					TERM 12				
Elective	8	0	16	4	27-08 Hist. Am. Art	4	0	8	4	27-09 Hist. Am. Art	4	0	8	4
Elective	8	0	16	4	27-34 Th. of Color	0	6	6	4	27-35 Oil Painting	0	6	6	4
Elective					Elective	4	0	8	4	Elective	4	0	8	4
					Elective	4	0	8	4	Elective	4	0	8	4
	16	0	32	8		12	6	30	16		12	6	30	16

FIFTH YEAR

TERM 13*					TERM 14					TERM 15				
Elective	8	0	16	4	27-36 Graphic Arts	0	6	6	4	27-37 Graphic Arts	0	6	6	4
Elective	8	0	16	4	27-38 Design for Industry	0	6	6	4	27-39 Design for Advertising	0	6	6	4
					Elective	4	0	8	4	Elective	4	0	8	4
					Elective	4	0	8	4	Elective	4	0	8	4
	16	0	32	8		8	12	28	16		8	12	28	16

*Summer term — 5 weeks.

**All physically qualified male freshmen may elect R.O.T.C. if they so desire. Students accepted for the R.O.T.C. will not be required to take Physical Training in Terms 1, 2, 3, and will be permitted to substitute advanced R.O.T.C. courses for certain upperclass academic work as approved by the Dean up to a maximum of 12 credits.

Curriculum in Biology

FIRST YEAR**

TERM 1					TERM 2					TERM 3						
No.	Course	Cl.	Lab.	Pr. Cr.	No.	Course	Cl.	Lab.	Pr. Cr.	No.	Course	Cl.	Lab.	Pr. Cr.		
30-01	English	3	0	6	3	30-02	English	3	0	6	3	30-03	English	3	0	6
11-01	Gen. Chem.	3	3	6	4	11-02	Gen. Chem.	3	3	6	4	11-03	Gen. Chem.	3	3	6
14-21	Basic Math.	3	0	6	3	14-22	Basic Math.	3	0	6	3	14-23	Basic Math.	3	0	6
10-01	Gen. Zool.	2	3	4	3	10-02	Gen. Zool.	2	3	4	3	10-03	Gen. Bot.	2	3	4
	Mod. Lang.						Mod. Lang.					Mod. Lang.				
	Elective	3	0	6	3		Elective	3	0	6	3		Elective	3	0	6
16-10	Phys. Tr.	0	2	0	0	16-11	Phys. Tr.	0	2	0	0	16-12	Phys. Tr.	0	2	0
		14	8	28	16			14	8	28	16			14	8	28

SECOND YEAR

TERM 4*						TERM 5						TERM 6					
10-04	Gen. Bot.	3	3	6	2	10-55	Comp. Anat.	3	3	6	4	10-56	Comp. Anat.	3	3	6	
11-04	Gen. Chem.	3	3	6	2	25-01	Int. Psych.	4	0	8	4	25-02	Gen. Psych.	4	0	8	
15-11	Gen. Phys.	6	0	12	3	15-12	Gen. Phys.	3	3	9	5	15-13	Gen. Phys.	3	3	9	
	Mod. Lang.						Mod. Lang.						Mod. Lang.				
	Elective	3	0	6	1½		Elective	4	0	8	4		Elective	4	0	8	
		15	6	30	8½			14	6	31	17			14	6	31	

THIRD YEAR

TERM 7*					TERM 8					TERM 9				
Elective	8	0	16	4	10-61 Embryology	3	3	6	4	10-62 Embryology	3	3	6	
Elective	8	0	16	4	10-40 Physiology	3	3	6	4	10-41 Physiology	3	3	6	
					Elective	4	0	8	4	Elective	4	0	8	
					Elective	4	0	8	4	Elective	4	0	8	
	16	0	32	8		14	6	28	16		14	6	28	

FOURTH YEAR

TERM 10*					TERM 11					TERM 12					
Elective	8	0	16	4	10-59	An. Histol.	3	3	6	4	10-60	An. Histol.	3	3	6
Elective	8	0	16	4	10-65	Genetics	3	2	7	4	10-71	Hist. Biol.	4	0	8
						Elective	4	0	8	4		Elective	4	0	8
						Elective	4	0	8	4		Elective	4	0	8
	16	0	32	8			14	5	29	16			15	3	30

FIFTH YEAR

TERM 13*					TERM 14					TERM 15					
Elective	8	0	16	4	10-69	Histol. Tech.	2	6	4	4	10-70	Histol. Tech.	2	6	4
Elective	8	0	16	4	10-20	Gen. Bact.	3	3	6	4	10-21	Gen. Bact.	3	3	6
						Elective	4	0	8	4		Elective	4	0	8
						Elective	4	0	8	4		Elective	4	0	8
	16	0	32	8			13	9	26	16			13	9	26

*Summer term — 5 weeks.

**All physically qualified male freshmen may elect R.O.T.C. if they so desire. Students accepted for the R.O.T.C. will not be required to take Physical Training in Terms 1, 2, 3, and will be permitted to substitute advanced R.O.T.C. courses for certain upperclass academic work as approved by the Dean up to a maximum of 12 credits.

Biology-Chemistry Curriculum

FIRST YEAR**

TERM 1				TERM 2				TERM 3			
No.	Course	Cl.	Lab.	Pr.	Cr.	No.	Course	Cl.	Lab.	Pr.	Cr.
0-01	English	3	0	6	3	30-02	English	3	0	6	3
1-01	Gen. Chem.	3	3	6	4	11-02	Gen. Chem.	3	3	6	4
4-21	Basic Math.	3	0	6	3	14-22	Basic Math.	3	0	6	3
0-01	Gen. Zool.	2	3	4	3	10-02	Gen. Zool.	2	3	4	3
	Mod. Lang.						Mod. Lang.				
	Elective	3	0	6	3		Elective	3	0	6	3
6-10	Phys. Tr.	0	2	0	0	16-11	Phys. Tr.	0	2	0	0
		14	8	28	16			14	8	28	16

SECOND YEAR

TERM 4*				TERM 5				TERM 6			
No.	Course	Cl.	Lab.	Pr.	Cr.	No.	Course	Cl.	Lab.	Pr.	Cr.
0-04	Gen. Bot.	3	3	6	2	10-55	Comp. Anat.	3	3	6	4
1-04	Gen. Chem.	3	3	6	2	11-17	Quant. Anal.	3	3	6	4
5-11	Gen. Phys.	6	0	12	3	15-12	Gen. Phys.	3	3	9	5
	Mod. Lang.						Mod. Lang.				
	Elective	3	0	6	1½		Elective	4	0	8	4
		15	6	30	8½			13	9	29	17

THIRD YEAR

TERM 7*				TERM 8				TERM 9			
No.	Course	Cl.	Lab.	Pr.	Cr.	No.	Course	Cl.	Lab.	Pr.	Cr.
	Elective	8	0	16	4	10-40	Physiology	3	3	6	4
	Elective	8	0	16	4	11-26	Org. Chem.	3	3	6	4
							Elective	4	0	8	4
							Elective	4	0	8	4
		16	0	32	8			14	6	28	16

FOURTH YEAR

TERM 10*				TERM 11				TERM 12			
No.	Course	Cl.	Lab.	Pr.	Cr.	No.	Course	Cl.	Lab.	Pr.	Cr.
	Elective	8	0	16	4	10-61	Embryology	3	3	6	4
	Elective	8	0	16	4	10-59	An. Histol.	3	3	6	4
						11-28	Org. Chem.	3	6	6	5
							Elective	4	0	8	4
		16	0	32	8			13	12	26	17

FIFTH YEAR

TERM 13*				TERM 14				TERM 15			
No.	Course	Cl.	Lab.	Pr.	Cr.	No.	Course	Cl.	Lab.	Pr.	Cr.
	Elective	8	0	16	4	10-20	Gen. Bact.	3	3	6	4
	Elective	8	0	16	4	11-45	Biol. Chem.	3	3	6	4
							Elective	4	0	8	4
							Elective	4	0	8	4
		16	0	32	8			14	6	28	16

*Summer term — 5 weeks.

**All physically qualified male freshmen may elect R.O.T.C. if they so desire. Students accepted for the R.O.T.C. will not be required to take Physical Training in Terms 1, 2, 3, and will be permitted to substitute advanced R.O.T.C. courses for certain upperclass academic work as approved by the Dean up to a maximum of 12 credits.

Curriculum in Chemistry

FIRST YEAR**

TERM 1				TERM 2				TERM 3			
No.	Course	Cl.	Lab.	Pr.	Cr.	No.	Course	Cl.	Lab.	Pr.	Cr.
30-01	English	3	0	6	3	30-02	English	3	0	6	3
11-01	Gen. Chem.	3	3	6	4	11-02	Gen. Chem.	3	3	6	4
14-01	Coll. Alg.	5	0	7	4	14-02	Trig.	5	0	7	4
15-01	Physics	3	0	6	3	15-02	Physics	3	0	6	3
32-01	El. German	3	0	6	3	32-02	El. German	3	0	6	3
16-10	Phys. Tr.	0	2	0	0	16-11	Phys. Tr.	0	2	0	0
		17	5	31	17			17	5	31	17

SECOND YEAR

TERM 4*				TERM 5				TERM 6			
No.	Course	Cl.	Lab.	Pr.	Cr.	No.	Course	Cl.	Lab.	Pr.	Cr.
11-04	Gen. Chem.	3	3	6	2	11-10	Quant. Anal.	2	3	4	3
14-04	Int. to Calc.	5	0	10	2½	11-11	Qual. Anal.	2	3	4	3
15-04	Physics	3	0	6	1½	14-05	Diff. Calc.	4	0	8	4
32-04	El. German	3	0	6	1½	15-05	Physics	3	3	6	4
		14	3	28	7½	32-15	Inter. Ger.	4	0	8	4
								15	9	30	18

THIRD YEAR

TERM 7*				TERM 8				TERM 9			
No.	Course	Cl.	Lab.	Pr.	Cr.	No.	Course	Cl.	Lab.	Pr.	Cr.
Elective		8	0	16	4	11-14	Quant. Anal.	3	6	6	5
Elective		8	0	16	4	14-07	Diff. Eq.	4	0	5	3
		16	0	32	8	20-11	Economics	3	0	6	3
						Elective		4	0	8	4
								14	6	25	15

FOURTH YEAR

TERM 10*				TERM 11				TERM 12			
No.	Course	Cl.	Lab.	Pr.	Cr.	No.	Course	Cl.	Lab.	Pr.	Cr.
Elective		8	0	16	4	11-20	Org. Chem.	3	6	6	5
Elective		8	0	16	4	11-31	Phys. Chem.	4	4	7	5
		16	0	32	8	15-14	Adv. Phys.	2	2	5	3
						24-07	Philosophy				
						or					
						25-07	Psychology	3	0	6	3
								12	12	24	16

FIFTH YEAR

TERM 13*				TERM 14				TERM 15			
No.	Course	Cl.	Lab.	Pr.	Cr.	No.	Course	Cl.	Lab.	Pr.	Cr.
Elective		8	0	16	4	11-22	Org. Chem.	3	0	6	3
Elective		8	0	16	4	11-29	Ad. Or. Prep.	0	6	0	2
		16	0	32	8	11-35	Ad. Phys. Ch.	3	3	6	4
						11-41	Chem. Lit.	1	0	2	1
						30-09	Rept. Writ.	3	0	6	3
						Elective		4	0	8	4
								14	9	28	17

*Summer term — 5 weeks.

**All physically qualified male freshmen may elect R.O.T.C. if they so desire. Students accepted for the R.O.T.C. will not be required to take Physical Training in Terms 1, 2, 3, and will be permitted to substitute advanced R.O.T.C. courses for certain upperclass academic work as approved by the Dean up to a maximum of 12 credits.

Curriculum in Economics

FIRST YEAR**

TERM 1					TERM 2					TERM 3							
No.	Course	Cl.	Lab.	Pr.	Cr.	No.	Course	Cl.	Lab.	Pr.	Cr.	No.	Course	Cl.	Lab.	Pr.	Cr.
0-01	English	3	0	6	3	30-02	English	3	0	6	3	30-03	English	3	0	6	3
0-01	West. Civ.	4	0	8	4	23-02	West. Civ.	4	0	8	4	23-03	West. Civ.	4	0	8	4
0-01	Am. Gov. or	3	0	6	3	22-02	Am. Gov. or	3	0	6	3	22-03	Am. Gov. or	3	0	6	3
0-21	Basic Math.	3	0	6	3	14-22	Basic Math.	3	0	6	3	14-23	Basic Math.	3	0	6	3
0-07	Surv. Sci. or	3	0	6	3	15-08	Surv. Sci. or	3	0	6	3	15-09	Surv. Sci. or	3	0	6	3
0-11	Gen. Biol.	2	3	4	3	10-12	Gen. Biol.	2	3	4	3	10-13	Gen. Biol.	2	3	4	3
	Mod. Lang.						Mod. Lang.						Mod. Lang.				
	Elective	3	0	6	3		Elective	3	0	6	3		Elective	3	0	6	3
0-10	Phys. Tr.	0	2	0	0	16-11	Phys. Tr.	0	2	0	0	16-12	Phys. Tr.	0	2	0	0
		16	2	32	16			16	2	32	16			16	2	32	16
	or	15	5	30			or	15	5	30			or	15	5	30	

SECOND YEAR

TERM 4*						TERM 5						TERM 6					
-10	Surv. Sci. or	4	0	8	2	20-05	Econ. Geog.	4	0	8	4	20-13	Econ. Prin.	4	0	8	4
-14	Gen. Biol.	3	3	6	2	25-01	Int. Psych.	4	0	8	4	25-02	Gen. Psych.	4	0	8	4
-04	West. Civ.	4	0	8	2	26-01	Prin. Soc.	4	0	8	4	26-02	Prin. Soc.	4	0	8	4
	Mod. Lang.						Mod. Lang.						Mod. Lang.				
	Elective	3	0	6	1½		Elective	4	0	8	4		Elective	4	0	8	4
-04	English	5	0	10	2½												
		16	0	32	8			16	0	32	16			16	0	32	16
	or	15	3	30													

THIRD YEAR

TERM 7*					TERM 8					TERM 9				
Elective	8	0	16	4	20-14 Econ. Prob.	4	0	8	4	20-15 Econ. Prob.	4	0	8	4
Elective	8	0	16	4	20-16 Acct. Prin.	3	2	7	4	20-17 Acct. Prin.	3	2	7	4
					Elective	4	0	8	4	Elective	4	0	8	4
					Elective	4	0	8	4	Elective	4	0	8	4

FOURTH YEAR

TERM 10*					TERM 11					TERM 12				
Elective	8	0	16	4	20-20 Statistics	3	2	7	4	20-21 Statistics	3	2	7	4
Elective	8	0	16	4	20-18 Am. Ec. Hist.	4	0	8	4	20-28 Econ. Syst.	4	0	8	4
					Elective	4	0	8	4	Elective	4	0	8	4
					Elective	4	0	8	4	Elective	4	0	8	4

FIFTH YEAR

TERM 13*					TERM 14					TERM 15				
Elective	8	0	16	4	20-24 Mon. & Bk.	4	0	8	4	20-26 Labor Econ.	4	0	8	4
Elective	8	0	16	4	20-31 Ad. Ec. Theo.	4	0	8	4	20-32 Ad. Ec. Theo.	4	0	8	4
					Elective	4	0	8	4	Elective	4	0	8	4
					Elective	4	0	8	4	Elective	4	0	8	4

*Summer term — 5 weeks.

All physically qualified male freshmen may elect R.O.T.C. if they so desire. Students accepted for the R.O.T.C. will not be required to take Physical Training in Terms 1, 2, 3, and will be permitted to substitute advanced R.O.T.C. courses for certain upperclass academic work as approved by the Dean up to a maximum of 12 credits.

Curriculum in English and English-Journalism

FIRST YEAR**

TERM 1						TERM 2						TERM 3					
No.	Course	Cl.	Lab.	Pr.	Cr.	No.	Course	Cl.	Lab.	Pr.	Cr.	No.	Course	Cl.	Lab.	Pr.	Cr.
30-01	English	3	0	6	3	30-02	English	3	0	6	3	30-03	English	3	0	6	3
23-01	West. Civ.	4	0	8	4	23-02	West. Civ.	4	0	8	4	23-03	West. Civ.	4	0	8	4
22-01	Am. Gov. or	3	0	6	3	22-02	Am. Gov. or	3	0	6	3	22-03	Am. Gov. or	3	0	6	3
14-21	Basic Math.	3	0	6	3	14-22	Basic Math.	3	0	6	3	14-23	Basic Math.	3	0	6	3
15-07	Surv. Sci. or	3	0	6	3	15-08	Surv. Sci. or	3	0	6	3	15-09	Surv. Sci. or	3	0	6	3
10-11	Gen. Biol.	2	3	4	3	10-12	Gen. Biol.	2	3	4	3	10-13	Gen. Biol.	2	3	4	3
	Mod. Lang.						Mod. Lang.						Mod. Lang.				
	Elective	3	0	6	3		Elective	3	0	6	3		Elective	3	0	6	3
16-10	Phys. Tr.	0	2	0	0	16-11	Phys. Tr.	0	2	0	0	16-12	Phys. Tr.	0	2	0	0
		16	2	32	16			16	2	32	16			16	2	32	16
	or 15	5	30				or 15	5	30				or 15	5	30		

SECOND YEAR

TERM 4*						TERM 5						TERM 6					
15-10	Surv. Sci. or	4	0	8	2	20-05	Econ. Geog.	4	0	8	4	20-13	Econ. Prin.	4	0	8	
10-14	Gen. Biol.	3	3	6	2	23-17	Am. Hist.	4	0	8	4	23-18	Am. Hist.	4	0	8	
23-04	West. Civ.	4	0	8	2	30-33	Engl. Lit.	4	0	8	4	30-34	Engl. Lit.	4	0	8	
	Mod. Lang.						Mod. Lang.						Mod. Lang.				
	Elective	3	0	6	1½		Elective	4	0	8	4		Elective	4	0	8	
30-04	English	5	0	10	2½												
		16	0	32	8			16	0	32	16			16	0	32	
	or 15	3	30														

THIRD YEAR

TERM 7*					TERM 8					TERM 9					
Elective	8	0	16	4	30-21	Inter. Writ.	4	0	8	4	30-22	Inter. Writ.	4	0	8
Elective	8	0	16	4	26-01	Prin. Soc.	4	0	8	4	26-02	Prin. Soc.	4	0	8
						Elective	4	0	8	4		Elective	4	0	8
						Elective	4	0	7	4		Elective	4	0	8
	16	0	32	8			16	0	32	16			16	0	32

FOURTH YEAR

TERM 10*					TERM 11					TERM 12				
Elective	8	0	16	4	30-29 Found. Engl.					30-30 Found. Engl.				
Elective	8	0	16	4	Lang. or	4	0	8	4	Lang. or	4	0	8	8
					30-51 Int. Jour.	4	0	8	4	30-52 Int. Jour.	4	0	8	8
					30-35 Am. Lit.	4	0	8	4	30-36 Am. Lit.	4	0	8	8
					Elective	4	0	8	4	Elective	4	0	8	8
					Elective	4	0	8	4	Elective	4	0	8	8
	16	0	32	8		16	0	32	16		16	0	32	16

FIFTH YEAR

TERM 13*					TERM 14					TERM 15				
Elective	8	0	16	4	30-43 19th Ct. Pr.	4	0	8	4	30-44 19th Ct. Pr.	4	0	8	
Elective	8	0	16	4	30-53 or Tech. of					30-54 or Tech. of				
					Jour.	4	0	8	4	Jour.	4	0	8	
					30-61 Shakespeare	4	0	8	4	30-62 Shakespeare	4	0	8	
					Elective	4	0	8	4	Elective	4	0	8	
					Elective	4	0	8	4	Elective	4	0	8	
	16	0	32	8		16	0	32	16		16	0	32	

*Summer term — 5 weeks.

**All physically qualified male freshmen may elect R.O.T.C. if they so desire. Students accepted for the R.O.T.C. will not be required to take Physical Training in Terms 1, 2, 3, and will be permitted to substitute advanced R.O.T.C. courses for certain upperclass academic work as approved by the Dean up to a maximum of 12 credits.

Curriculum in History-Government

FIRST YEAR**

TERM 1				TERM 2				TERM 3			
No.	Course	Cl.	Lab.	No.	Course	Cl.	Lab.	No.	Course	Cl.	Lab.
0-01	English	3	0	30-02	English	3	0	30-03	English	3	0
0-01	West. Civ.	4	0	23-02	West. Civ.	4	0	23-03	West. Civ.	4	0
0-01	Am. Gov. or	3	0	22-02	Am. Gov. or	3	0	22-03	Am. Gov. or	3	0
0-21	Basic Math.	3	0	14-22	Basic Math.	3	0	14-23	Basic Math.	3	0
0-07	Surv. Sci. or	3	0	15-08	Surv. Sci. or	3	0	15-09	Surv. Sci. or	3	0
0-11	Gen. Biol.	2	3	10-12	Gen. Biol.	2	3	10-13	Gen. Biol.	2	3
	Mod. Lang.				Mod. Lang.				Mod. Lang.		
	Elective	3	0		Elective	3	0		Elective	3	0
0-10	Phys. Tr.	0	2	16-11	Phys. Tr.	0	2	16-12	Phys. Tr.	0	2
		16	2			16	2			16	2
		or 15	5			or 15	5			or 15	5
		30	16			30	16			30	16

SECOND YEAR

TERM 4*				TERM 5				TERM 6			
0-10	Surv. Sci. or	4	0	20-05	Econ. Geog.	4	0	20-13	Econ. Prin.	4	0
0-14	Gen. Biol.	3	3	23-17	Am. Hist.	4	0	23-18	Am. Hist.	4	0
0-04	West. Civ.	4	0	30-33	Engl. Lit.	4	0	30-34	Engl. Lit.	4	0
	Mod. Lang.				Mod. Lang.				Mod. Lang.		
	Elective	3	0		Elective	4	0		Elective	4	0
0-04	English	5	0			16	0			16	0
		16	0			32	16			32	16
		or 15	3			30				30	

THIRD YEAR

TERM 7*					TERM 8					TERM 9				
Elective	8	0	16	4	22-11 For. Gov.	4	0	8	4	22-12 For. Gov.	4	0	8	4
Elective	8	0	16	4	23-11 Eur. Hist.	4	0	8	4	23-12 Eur. Hist.	4	0	8	4
					Elective	4	0	8	4	Elective	4	0	8	4
					Elective	4	0	8	4	Elective	4	0	8	4
	16	0	32	8		16	0	32	16		16	0	32	16

FOURTH YEAR

TERM 10*					TERM 11					TERM 12				
Elective	8	0	16	4	22-13 Pol. Theory	4	0	8	4	22-14 Pol. Theory	4	0	8	4
Elective	8	0	16	4	23-13 Engl. Hist.	4	0	8	4	23-14 Engl. Hist.	4	0	8	4
					Elective	4	0	8	4	Elective	4	0	8	4
					Elective	4	0	8	4	Elective	4	0	8	4
	16	0	32	8		16	0	32	16		16	0	32	16

FIFTH YEAR

TERM 13*					TERM 14					TERM 15				
Elective	8	0	16	4	22-20 Pub. Adm.	4	0	8	4	22-21 Pub. Adm.	4	0	8	4
Elective	8	0	16	4	23-19 Lt. Am. His.	4	0	8	4	23-20 Lt. Am. His.	4	0	8	4
					Elective	4	0	8	4	Elective	4	0	8	4
					Elective	4	0	8	4	Elective	4	0	8	4
	16	0	32	8		16	0	32	16		16	0	32	16

Summer term — 5 weeks.

All physically qualified male freshmen may elect R.O.T.C. if they so desire. Students accepted for the R.O.T.C. will not be required to take Physical Training in Terms 1, 2, 3, and will be permitted to substitute advanced R.O.T.C. courses for certain upperclass academic work as approved by the Dean up to a maximum of 12 credits.

Curriculum in Mathematics

FIRST YEAR**

TERM 1				TERM 2				TERM 3			
No.	Course	Cl.	Lab.	Pr.	Cr.	No.	Course	Cl.	Lab.	Pr.	Cr.
30-01	English	3	0	6	3	30-02	English	3	0	6	3
11-01	Gen. Chem.	3	3	6	4	11-02	Gen. Chem.	3	3	6	4
14-01	Coll. Alg.	5	0	7	4	14-02	Trig.	5	0	7	4
15-01	Physics	3	0	6	3	15-02	Physics	3	0	6	3
	Mod. Lang.						Mod. Lang.				
	Elective	3	0	6	3		Elective	3	0	6	3
16-10	Phys. Tr.	0	2	0	0	16-11	Phys. Tr.	0	2	0	0
		17	5	31	17			17	5	31	17

SECOND YEAR

TERM 4*				TERM 5				TERM 6			
11-04	Gen. Chem.	3	3	6	2	30-33	Engl. Lit.	4	0	8	4
14-04	Int. to Calc.	5	0	10	2½	14-05	Diff. Calc.	4	0	8	4
15-04	Physics	3	0	6	1½	15-05	Physics	3	3	6	4
	Mod. Lang.						Mod. Lang.				
	Elective	3	0	6	1½		Elective	4	0	8	4
		14	3	28	7½			15	3	30	16

THIRD YEAR

TERM 7*					TERM 8					TERM 9				
Elective	8	0	16	4	14-07 Diff. Eq. I	4	0	5	3	14-08 Diff. Eq. II	4	0	8	
Elective	8	0	16	4	Elective	4	0	8	4	Elective	4	0	8	
					Elective	4	0	8	4	Elective	4	0	8	
					Elective	4	0	8	4	Elective	4	0	8	
	16	0	32	8		16	0	29	15		16	0	32	

FOURTH YEAR

TERM 10*					TERM 11					TERM 12				
Elective	8	0	16	4	14-15 Adv. Calc.	4	0	8	4	14-16 Adv. Calc.	4	0	8	
Elective	8	0	16	4	14-09 Anal. Mech. I	4	0	8	4	14-10 Anal. Mech. II	4	0	8	
					Elective	4	0	8	4	Elective	4	0	8	
					Elective	4	0	8	4	Elective	4	0	8	
	16	0	32	8		16	0	32	16		16	0	32	

FIFTH YEAR

TERM 13*					TERM 14					TERM 15				
Elective	8	0	16	4	14-17 Inf. Series	4	0	8	4	14-18 Theo. Eq.	4	0	8	
Elective	8	0	16	4	14-28 Prob. & Stat.	4	0	8	4	14-29 Math. of Stat.	4	0	8	
					Elective	4	0	8	4	Elective	4	0	8	
					Elective	4	0	8	4	Elective	4	0	8	
	16	0	32	8		16	0	32	16		16	0	32	

*Summer term — 5 weeks.

**All physically qualified male freshmen may elect R.O.T.C. if they so desire. Students accepted for the R.O.T. will not be required to take Physical Training in Terms 1, 2, 3, and will be permitted to substitute advanced R.O.T.C. courses for certain upperclass academic work as approved by the Dean up to a maximum of 12 credits.

Curriculum in Physics

FIRST YEAR**

TERM 1					TERM 2					TERM 3				
No.	Course	Cl.	Lab.	Pr. Cr.	No.	Course	Cl.	Lab.	Pr. Cr.	No.	Course	Cl.	Lab.	Pr. Cr.
0-01	English	3	0	6 3	30-03	English	3	0	6 3	30-03	English	3	0	6 3
0-01	Gen. Chem.	3	3	6 4	11-02	Gen. Chem.	3	3	6 4	11-03	Gen. Chem.	3	3	6 4
0-01	Coll. Alg.	5	0	7 4	14-02	Trig.	5	0	7 4	14-03	Anal. Geom.	5	0	10 5
0-01	Physics	3	0	6 3	15-02	Physics	3	0	6 3	15-03	Physics	3	0	6 3
	Mod. Lang.					Mod. Lang.					Mod. Lang.			
	Elective	3	0	6 3		Elective	3	0	6 3		Elective	3	0	6 3
10	Phys. Tr.	0	2	0 0	16-11	Phys. Tr.	0	2	0 0	16-12	Phys. Tr.	0	2	0 0
		17	5	31 17			17	5	31 17			17	5	34 18

SECOND YEAR

TERM 4*					TERM 5					TERM 6				
No.	Course	Cl.	Lab.	Pr. Cr.	No.	Course	Cl.	Lab.	Pr. Cr.	No.	Course	Cl.	Lab.	Pr. Cr.
0-04	Gen. Chem.	3	3	6 2	30-33	Eng. Lit.	4	0	8 4	30-34	Eng. Lit.	4	0	8 4
0-04	Int. to Calc.	5	0	10 2½	14-05	Diff. Calc.	4	0	8 4	14-06	Int. Calc.	4	0	8 4
0-04	Physics	3	0	6 1½	15-05	Physics	3	3	6 4	15-06	Physics	3	3	6 4
	Mod. Lang.					Mod. Lang.					Mod. Lang.			
	Elective	3	0	6 1½		Elective	4	0	8 4		Elective	4	0	8 4
		14	3	28 7½			15	3	30 16			15	3	30 16

THIRD YEAR

TERM 7*					TERM 8					TERM 9				
No.	Course	Cl.	Lab.	Pr. Cr.	No.	Course	Cl.	Lab.	Pr. Cr.	No.	Course	Cl.	Lab.	Pr. Cr.
	Elective	8	0	16 4	15-16	Elect. & Mag.	3	0	6 3	15-24	Electronics	3	2	7 4
	Elective	8	0	16 4	15-20	Optics	3	3	6 4	15-21	Optics	3	3	6 4
					14-07	Diff. Eq. I	4	0	5 3	14-08	Diff. Eq. II	4	0	8 4
						Elective	4	0	8 4		Elective	4	0	8 4
		16	0	32 8			14	3	25 14			14	5	29 16

FOURTH YEAR

TERM 10*					TERM 11					TERM 12				
No.	Course	Cl.	Lab.	Pr. Cr.	No.	Course	Cl.	Lab.	Pr. Cr.	No.	Course	Cl.	Lab.	Pr. Cr.
	Elective	8	0	16 4	15-22	Acoustics	3	3	6 4	15-23	Acoustics	3	3	6 4
	Elective	8	0	16 4	15-25	Electronics	3	2	7 4	15-28	El. Instr. or	2	4	6 4
					14-15	Adv. Calc.	4	0	8 4	15-29	Radio Comm.	3	2	7 4
						Elective	4	0	8 4	14-16	Adv. Calc.	4	0	8 4
		16	0	32 8			14	5	29 16		Elective	4	0	8 4
												13	7	28 16
												or 14	5	29

FIFTH YEAR

TERM 13*					TERM 14					TERM 15				
No.	Course	Cl.	Lab.	Pr. Cr.	No.	Course	Cl.	Lab.	Pr. Cr.	No.	Course	Cl.	Lab.	Pr. Cr.
	Elective	8	0	16 4	15-26	Mod. Phys.	4	0	8 4	15-27	Mod. Phys.	4	0	8 4
	Elective	8	0	16 4	14-17	Inf. Series	4	0	8 4	14-18	Theo. Eq.	4	0	8 4
						Elective	4	0	8 4		Elective	4	0	8 4
						Elective	4	0	8 4		Elective	4	0	8 4
		16	0	32 8			16	0	32 16			16	0	32 16

Summer term — 5 weeks.

All physically qualified male freshmen may elect R.O.T.C. if they so desire. Students accepted for the R.O.T.C. will not be required to take Physical Training in Terms 1, 2, 3, and will be permitted to substitute advanced R.O.T.C. courses for certain upperclass academic work as approved by the Dean up to a maximum of 12 credits.

Two-Year Predental Curriculum

FIRST YEAR**

TERM 1					TERM 2					TERM 3						
No.	Course	Cl.	Lab.	Pr. Cr.	No.	Course	Cl.	Lab.	Pr. Cr.	No.	Course	Cl.	Lab.	Pr. Cr.		
30-01	English	3	0	6	3	30-02	English	3	0	6	3	30-03	English	3	0	6
11-01	Gen. Chem.	3	3	6	4	11-02	Gen. Chem.	3	3	6	4	11-03	Gen. Chem.	3	3	6
14-21	Basic Math.	3	0	6	3	14-22	Basic Math.	3	0	6	3	14-32	Basic Math.	3	0	6
10-01	Gen. Zool.	2	3	4	3	10-02	Gen. Zool.	2	3	4	3	10-03	Gen. Bot.	2	3	4
	Mod. Lang.						Mod. Lang.					Mod. Lang.				
	Elective	3	0	6	3		Elective	3	0	6	3		Elective	3	0	6
16-10	Phys. Tr.	0	2	0	0	16-11	Phys. Tr.	0	2	0	0	16-12	Phys. Tr.	0	2	0
		14	8	28	16			14	8	28	16			14	8	28

SECOND YEAR

TERM 4*					TERM 5					TERM 6						
10-04	Gen. Bot.	3	3	6	2	10-55	Comp. Anat.	3	3	6	4	10-56	Comp. Anat.	3	3	6
11-04	Gen. Chem.	3	3	6	2	25-01	Int. Psych.	4	0	8	4	11-27	Org. Chem.	3	3	6
15-11	Gen. Phys.	6	0	12	3	15-12	Gen. Phys.	3	3	9	5	15-13	Gen. Phys.	3	3	9
	Mod. Lang.						Mod. Lang.						Mod. Lang.			
	Elective	3	0	6	1½		Elective	4	0	8	4		Elective	4	0	8
		15	6	30	8½			14	6	31	17			13	9	29

TERM 5-A					
10-40	Physiology	3	3	6	4
11-26	Org. Chem.	3	3	6	4
30-33	Eng. Lit.	4	0	8	4
	Elective	4	0	8	4
		14	6	28	16

NOTE: Predental students who wish to continue for a degree may be excused from the Co-operative Plan and may complete requirements for a degree in four years.

*Summer term — 5 weeks.

**All physically qualified male freshmen may elect R.O.T.C. if they so desire. Students accepted for the R.O.T.C. will not be required to take Physical Training in Terms 1, 2, 3, and will be permitted to substitute advanced R.O.T.C. courses for certain upperclass academic work as approved by the Dean up to a maximum of 12 credits.

Two-Year Prelegal Curriculum

FIRST YEAR**

TERM 1				TERM 2				TERM 3			
No.	Course	Cl.	Lab.	Pr.	Cr.	No.	Course	Cl.	Lab.	Pr.	Cr.
01	English	3	0	6	3	30-02	English	3	0	6	3
01	West. Civ.	4	0	8	4	23-02	West. Civ.	4	0	8	4
01	Am. Gov. or	3	0	6	3	22-02	Am. Gov. or	3	0	6	3
21	Basic Math.	3	0	6	3	14-22	Basic Math.	3	0	6	3
07	Surv. Sci. or	3	0	6	3	15-08	Surv. Sci. or	3	0	6	3
11	Gen. Biol.	2	3	4	3	10-12	Gen. Biol.	2	3	4	3
	Mod. Lang.						Mod. Lang.				
	Elective	3	0	6	3		Elective	3	0	6	3
10	Phys. Tr.	0	2	0	0	16-11	Phys. Tr.	0	2	0	0
		16	2	32	16			16	2	32	16
	or 15	5	30				or 15	5	30		

SECOND YEAR

TERM 4*				TERM 5				TERM 6			
No.	Course	Cl.	Lab.	Pr.	Cr.	No.	Course	Cl.	Lab.	Pr.	Cr.
10	Surv. Sci. or	4	0	8	2	20-05	Econ. Geog.	4	0	8	4
14	Gen. Biol.	3	3	6	2	23-17	Am. Hist.	4	0	8	4
04	West. Civ.	4	0	8	2	30-33	Engl. Lit.	4	0	8	4
	Mod. Lang.						Mod. Lang.				
	Elective	3	0	6	1½		Elective	4	0	8	4
04	English	5	0	10	2½						
		16	0	32	8			16	0	32	16
	or 15	3	30								

TERM 5-A

22-11	For. Gov.	4	0	8	4
23-13	Engl. Hist.	4	0	8	4
	Elective	4	0	8	4
	Elective	4	0	8	4
		16	0	32	16

RE: Prelegal students who wish to qualify for the A.B. degree under the Combined Program with the Northeastern University Law School, described on page 64, attend college for a third year of three terms without going on the Co-operative Plan.

*Summer term — 5 weeks.

All physically qualified male freshmen may elect R.O.T.C. if they so desire. Students accepted for the R.O.T.C. will not be required to take Physical Training in Terms 1, 2, 3, and will be permitted to substitute advanced R.O.T.C. courses for certain upperclass academic work as approved by the Dean up to a maximum of 2 credits.

Premedical Curriculum

FIRST YEAR**

TERM 1				TERM 2				TERM 3			
No.	Course	Cl.	Lab.	Pr.	Cr.	No.	Course	Cl.	Lab.	Pr.	Cr.
30-01	English	3	0	6	3	30-02	English	3	0	6	3
11-01	Gen. Chem.	3	3	6	4	11-02	Gen. Chem.	3	3	6	4
14-21	Basic Math.	3	0	6	3	14-22	Basic Math.	3	0	6	3
10-01	Gen. Zool.	2	3	4	3	10-02	Gen. Zool.	2	3	4	3
	Mod. Lang.						Mod. Lang.				
	Elective	3	0	6	3		Elective	3	0	6	3
16-10	Phys. Tr.	0	2	0	0	16-11	Phys. Tr.	0	2	0	0
		14	8	28	16			14	8	28	16

SECOND YEAR

TERM 4*				TERM 5				TERM 6			
No.	Course	Cl.	Lab.	Pr.	Cr.	No.	Course	Cl.	Lab.	Pr.	Cr.
10-04	Gen. Bot.	3	3	6	2	10-55	Comp. Anat.	3	3	6	4
11-04	Gen. Chem.	3	3	6	2	11-17	Quant. Anal.	3	3	6	4
15-11	Gen. Phys.	6	0	12	3	15-12	Gen. Phys.	3	3	9	5
	Mod. Lang.						Mod. Lang.				
	Elective	3	0	6	1½		Elective	4	0	8	4
		15	6	30	8½			13	9	29	17

THIRD YEAR

TERM 7*				TERM 8				TERM 9			
No.	Course	Cl.	Lab.	Pr.	Cr.	No.	Course	Cl.	Lab.	Pr.	Cr.
	Elective	8	0	16	4	10-40	Physiology	3	3	6	4
	Elective	8	0	16	4	11-26	Org. Chem.	3	3	6	4
							Elective	4	0	8	4
							Elective	4	0	8	4
		16	0	32	8			14	6	28	16

FOURTH YEAR

TERM 10*				TERM 11				TERM 12			
No.	Course	Cl.	Lab.	Pr.	Cr.	No.	Course	Cl.	Lab.	Pr.	Cr.
	Elective	8	0	16	4	10-61	Embryology	3	3	6	4
	Elective	8	0	16	4	11-28	Org. Chem.	3	6	6	5
							Elective	4	0	8	4
							Elective	4	0	8	4
		16	0	32	8			14	9	28	17

FIFTH YEAR

TERM 13*				TERM 14				TERM 15			
No.	Course	Cl.	Lab.	Pr.	Cr.	No.	Course	Cl.	Lab.	Pr.	Cr.
	Elective	8	0	16	4	10-65	Genetics	3	2	6	4
	Elective	8	0	16	4		Elective	4	0	8	4
							Elective	4	0	8	4
							Elective	4	0	8	4
		16	0	32	8			15	2	30	16

NOTE: Premedical students may be excused from the Co-operative Plan and may complete this program four years.

*Summer term — 5 weeks.

**All physically qualified male freshmen may elect R.O.T.C. if they so desire. Students accepted for the R.O.T.C. will not be required to take Physical Training in Terms 1, 2, 3, and will be permitted to substitute advanced R.O.T.C. courses for certain upperclass academic work as approved by the Dean up to a maximum of 12 credits.

Two-Year Premedical Technology Curriculum

FIRST YEAR**

TERM 1					TERM 2					TERM 3							
No.	Course	Cl.	Lab.	Pr.	Cr.	No.	Course	Cl.	Lab.	Pr.	Cr.	No.	Course	Cl.	Lab.	Pr.	Cr.
0-01	English	3	0	6	3	30-02	English	3	0	6	3	30-03	English	3	0	6	3
1-01	Gen. Chem.	3	3	6	4	11-02	Gen. Chem.	3	3	6	4	11-03	Gen. Chem.	3	3	6	4
4-21	Basic Math.	3	0	6	3	14-22	Basic Math.	3	0	6	3	14-23	Basic Math.	3	0	6	3
0-01	Gen. Zool.	2	3	4	3	10-02	Gen. Zool.	2	3	4	3	10-03	Gen. Bot.	2	3	4	3
	Mod. Lang.						Mod. Lang.						Mod. Lang.				
	Elective	3	0	6	3		Elective	3	0	6	3		Elective	3	0	6	3
6-10	Phys. Tr.	0	2	0	0	16-11	Phys. Tr.	0	2	0	0	16-12	Phys. Tr.	0	2	0	0
		14	8	28	16			14	8	28	16			14	8	28	16

SECOND YEAR

TERM 4*					TERM 5					TERM 6							
0-04	Gen. Bot.	3	3	6	2	10-55	Comp. Anat.	3	3	6	4	10-56	Comp. Anat.	3	3	6	4
1-04	Gen. Chem.	3	3	6	2	11-17	Quant. Anal.	3	3	6	4	11-18	Quant. Anal.	2	3	4	3
5-11	Gen. Phys.	6	0	12	3	15-12	Gen. Phys.	3	3	9	5	15-13	Gen. Phys.	3	3	9	5
	Mod. Lang.						Mod. Lang.						Mod. Lang.				
	Elective	3	0	6	1½		Elective	4	0	8	4		Elective	4	0	8	4
		15	6	30	8½			13	9	29	17			12	9	27	16

TERM 5-A					
10-40	Physiology	3	3	6	4
11-26	Org. Chem.	3	3	6	4
	Elective	4	0	8	4
	Elective	4	0	8	4
		14	6	28	16

NOTE: Premedical Technology students who wish to continue for a degree may be excused from the Co-operative Plan and may complete requirements for a degree in four years.

*Summer term — 5 weeks.

**All physically qualified male freshmen may elect R.O.T.C. if they so desire. Students accepted for the R.O.T.C. will not be required to take Physical Training in Terms 1, 2, 3, and will be permitted to substitute advanced R.O.T.C. courses for certain upperclass academic work as approved by the Dean up to a maximum of 12 credits.

Curriculum in Psychology

FIRST YEAR**

TERM 1				TERM 2				TERM 3			
No.	Course	Cl.	Lab.	Pr.	Cr.	No.	Course	Cl.	Lab.	Pr.	Cr.
30-01	English	3	0	6	3	30-02	English	3	0	6	3
23-01	West. Civ.	4	0	8	4	23-02	West. Civ.	4	0	8	4
14-21	Basic Math.	3	0	6	3	14-22	Basic Math.	3	0	6	3
10-11	Gen. Biol.	2	3	4	3	10-12	Gen. Biol.	2	3	4	3
	Mod. Lang.						Mod. Lang.				
	Elective	3	0	6	3		Elective	3	0	6	3
16-10	Phys. Tr.	0	2	0	0	16-11	Phys. Tr.	0	2	0	0
		15	5	30	16			15	5	30	16

SECOND YEAR

TERM 4*				TERM 5				TERM 6			
No.	Course	Cl.	Lab.	Pr.	Cr.	No.	Course	Cl.	Lab.	Pr.	Cr.
10-14	Gen. Biol.	3	3	6	2	20-05	Econ. Geog.	4	0	8	4
23-04	West. Civ.	4	0	8	2	25-01	Int. Psych.	4	0	8	4
	Mod. Lang.					26-01	Prin. Soc.	4	0	8	4
	Elective	3	0	6	1½		Mod. Lang.				
30-04	English	5	0	10	2½		Elective	4	0	8	4
		15	3	30	8			16	0	32	16

THIRD YEAR

TERM 7*				TERM 8 *				TERM 9			
No.	Course	Cl.	Lab.	Pr.	Cr.	No.	Course	Cl.	Lab.	Pr.	Cr.
	Elective	8	0	16	4	25-11	Ind. Diff.	4	0	8	4
	Elective	8	0	16	4	25-12	Exp. Psych.	3	3	6	4
							Elective	4	0	8	4
							Elective	4	0	8	4
		16	0	32	8			15	3	30	16

FOURTH YEAR

TERM 10*				TERM 11				TERM 12			
No.	Course	Cl.	Lab.	Pr.	Cr.	No.	Course	Cl.	Lab.	Pr.	Cr.
	Elective	8	0	16	4	25-20	Measure. III	4	0	8	4
	Elective	8	0	16	4	25-34	Child Psych.	4	0	8	4
						25-71	Seminar	2	0	1	1
							Elective	4	0	8	4
							Elective	4	0	8	4
		16	0	32	8			17	3	31	17

FIFTH YEAR

TERM 13*				TERM 14				TERM 15			
No.	Course	Cl.	Lab.	Pr.	Cr.	No.	Course	Cl.	Lab.	Pr.	Cr.
	Elective	8	0	16	4	25-31	Ab. Psych.	4	0	8	4
	Elective	8	0	16	4	25-41	Adv. Psych.	4	0	8	4
						25-73	Seminar	2	0	1	1
							Elective	4	0	8	4
							Elective	4	0	8	4
		16	0	32	8			18	0	33	17

*Summer term — 5 weeks.

**All physically qualified male freshmen may elect R.O.T.C. if they so desire. Students accepted for the R.O.T.C. will not be required to take Physical Training in Terms 1, 2, 3, and will be permitted to substitute advanced R.O.T.C. courses for certain upperclass academic work as approved by the Dean up to a maximum of 12 credits.

Curriculum in Sociology

FIRST YEAR**

TERM 1					TERM 2					TERM 3							
No.	Course	Cl.	Lab.	Pr.	Cr.	No.	Course	Cl.	Lab.	Pr.	Cr.	No.	Course	Cl.	Lab.	Pr.	Cr.
0-01	English	3	0	6	3	30-02	English	3	0	6	3	30-03	English	3	0	6	3
0-01	West. Civ.	4	0	8	4	23-02	West. Civ.	4	0	8	4	23-03	West. Civ.	4	0	8	4
2-01	Am. Gov. or	3	0	6	3	22-02	Am. Gov. or	3	0	6	3	22-03	Am. Gov. or	3	0	6	3
4-21	Basic Math.	3	0	6	3	14-22	Basic Math.	3	0	6	3	14-23	Basic Math.	3	0	6	3
5-07	Surv. Sci. or	3	0	6	3	15-08	Surv. Sci. or	3	0	6	3	15-09	Surv. Sci. or	3	0	6	3
9-11	Gen. Biol.	2	3	4	3	10-12	Gen. Biol.	2	3	4	3	10-13	Gen. Biol.	2	3	4	3
	Mod. Lang.						Mod. Lang.						Mod. Lang.				
	Elective	3	0	6	3		Elective	3	0	6	3		Elective	3	0	6	3
5-10	Phys. Tr.	0	2	0	0	16-11	Phys. Tr.	0	2	0	0	16-12	Phys. Tr.	0	2	0	0
		16	2	32	16			16	2	32	16			16	2	32	16
	or	15	5	30			or	15	5	30			or	15	5	30	

SECOND YEAR

TERM 4*						TERM 5						TERM 6					
0-10	Surv. Sci. or	4	0	8	2	20-05	Econ. Geog.	4	0	8	4	20-13	Econ. Prin.	4	0	8	4
0-14	Gen. Biol.	3	3	6	2	25-01	Int. Psych.	4	0	8	4	25-02	Gen. Psych.	4	0	8	4
0-04	West. Civ.	4	0	8	2	26-01	Prin. Soc.	4	0	8	4	26-02	Prin. Soc.	4	0	8	4
	Mod. Lang.						Mod. Lang.						Mod. Lang.				
	Elective	3	0	6	1½		Elective	4	0	8	4		Elective	4	0	8	4
0-04	English	5	0	10	2½												
		16	0	32	8			16	0	32	16			16	0	32	16
	or 15	3	30														

THIRD YEAR

TERM 7*					TERM 8					TERM 9				
Elective	8	0	16	4	20-14 Econ. Prob.	4	0	8	4	20-15 Econ. Prob.	4	0	8	4
Elective	8	0	16	4	26-11 Soc. Prob.	4	0	8	4	26-12 Soc. Prob.	4	0	8	4
					Elective	4	0	8	4	Elective	4	0	8	4
					Elective	4	0	8	4	Elective	4	0	8	4
	16	0	32	8		16	0	32	16		16	0	32	16

FOURTH YEAR

TERM 10*					TERM 11					TERM 12				
Elective	8	0	16	4	26-13 Soc. Eth.	4	0	8	4	26-14 Soc. Eth.	4	0	8	4
Elective	8	0	16	4	26-15 The Family	4	0	8	4	26-16 Criminology	4	0	8	4
					Elective	4	0	8	4	Elective	4	0	8	4
					Elective	4	0	8	4	Elective	4	0	8	4
	16	0	32	8		16	0	32	16		16	0	32	16

FIFTH YEAR

TERM 13*					TERM 14					TERM 15				
Elective	8	0	16	4	26-17 Urban Soc.	4	0	8	4	26-18 Soc. Prog.	4	0	8	4
Elective	8	0	16	4	26-19 Soc. Theory	4	0	8	4	26-22 Prin. Soc. Wk.	4	0	8	4
					Elective	4	0	8	4	Elective	4	0	8	4
					Elective	4	0	8	4	Elective	4	0	8	4
	16	0	32	8		16	0	32	16		16	0	32	16

*Summer term — 5 weeks.

**All physically qualified male freshmen may elect R.O.T.C. if they so desire. Students accepted for the R.O.T.C. will not be required to take Physical Training in Terms 1, 2, 3, and will be permitted to substitute advanced R.O.T.C. courses for certain upperclass academic work as approved by the Dean up to a maximum of 12 credits.

NORTHEASTERN UNIVERSITY

COLLEGE OF
BUSINESS
ADMINISTRATION

Admission Requirements and Courses of Study

1952-1953



(COEDUCATIONAL)

BOSTON 15, MASSACHUSETTS
JANUARY, 1952

THE COLLEGE OF BUSINESS ADMINISTRATION

Policy

THE COLLEGE OF BUSINESS ADMINISTRATION offers programs of professional education at the university level to meet the needs of the young men and women who hope to fill administrative positions in business. Intelligent management of our complex enterprises cannot be soundly undertaken without a full appreciation of the social, economic, and political environment in which business must operate, without a complete understanding of the basic principles of business, and without practical knowledge of the tools of business management.

The academic content of the different curricula in the College of Business Administration is, therefore, divided roughly as follows: one-eighth in English (writing and speaking), one-third in the social sciences, one-quarter in a special branch of business, and one-quarter in related business subjects. Since periods of probation and apprenticeship are inherent in the nature of positions at the administrative level, the Northeastern programs based upon the Co-operative Plan are especially significant.

Aims of the College

In keeping with current trends in collegiate business education, the educational policy of the college is directed toward the achievement of the following purposes:

First: To offer that type of education for business which will enable men and women to select most advisedly the field of business best suited to their aptitudes. The Co-operative Plan is particularly effective in this respect.

Second: To build for breadth of perspective through balanced, carefully coordinated programs of study in order to provide a background for specialization and yet not overlook basic professional requirements.

Third: To provide a thorough knowledge of fundamental economic laws and an understanding of their applications in business.

Fourth: To develop the habits of accurate thinking that are essential to sound judgment.

Fifth: To develop attitudes and ideals that are ethically sound and socially desirable.

Methods

In order that these aims may be realized as fully as possible, the College makes use of the problem and the case methods of instruction in addition to the lecture and recitation system. Students should learn to analyze every proposition, to challenge unsupported assertions, to think independently, and to support their thinking with logic and facts.

Hence, concrete problems and cases which executives have faced in accounting, marketing, organizing, and the like constitute a large proportion of class-work in the upper years.

Admission Requirements

Applicants for admission to the freshman class must qualify by graduation from an approved course of study in an accredited secondary school, including prescribed subjects listed below.

Applicants are not required to take entrance examinations in high school subjects, but all candidates for the freshman class are asked to come to Northeastern University to take scholastic aptitude tests.

In the event that the distance to Boston from an applicant's place of residence is too great, the Committee on Admissions is willing under certain conditions to make a decision on test results submitted by the College Entrance Examination Board.

Prescribed Subjects for Admission

College of Business Administration

Algebra	1 unit
Natural science	1 unit
Science, social studies, mathematics and/or foreign language	6 units
English (four years)	3 units
Electives	4 units
Total	15 units

A unit is a credit given to an acceptable secondary school course which meets at least four times a week for periods of not less than forty minutes each throughout the school year.

Other Requirements

These formal requirements are necessary and desirable in that they tend to provide all entering students with a common ground upon which the first year of the college curriculum can be based. But academic credits alone are not an adequate indication of a student's ability to profit by a college education. Consequently, the Department of Admissions takes into consideration, along with the formal requirements stated above, other factors regarding candidates for the freshman class. A student's interests and aptitudes in so far as these can be determined, capacity for hard work, attitude toward classmates and teachers in high school, physical stamina, and most important of all, character, are considered. In this way the University seeks to select for its student body those who not only meet the academic admission requirements but who also give promise of acquitting themselves creditably in the rigorous program of training afforded by the Co-operative Plan and of being useful members of society.

Personal Interview

A personal interview is always preferred to correspondence, and parents are urged to accompany the applicant whenever this is possible. Effective guidance depends in large measure upon a complete knowledge of a student's background and problems. Parents invariably are able to contribute information that aids the admissions officer in arriving at a decision.

Applicants who come from a distance are advised to write in advance to see if it is possible to arrange for an interview and for the required scholastic aptitude tests on the same day. The examinations are scheduled only on Saturday mornings, at dates to be announced. Office hours are from 9:00 A.M. to 4:00 P.M. daily; Saturdays to 12:00 M. The Department of Admissions will interview applicants on Wednesday evenings but by appointment only.

Application for Admission

Each applicant for admission is required to fill out an application blank stating previous education, as well as the names of persons to whom reference may be made.

A fee of five dollars (\$5.00) is required when the application is filed. This fee is nonreturnable.

The last page of this catalog is in the form of an application blank. It should be filled out in ink and forwarded with the required five-dollar fee to the Director of Admissions, Northeastern University, Boston 15, Massachusetts.

Checks should be made out to Northeastern University.

Upon receipt of the application, properly filled out, the University secures the references and secondary school record. Applicants having satisfactory secondary school records are notified to report to the University to take special scholastic aptitude tests. As soon as possible after the Committee on Admissions has reviewed the results of these tests, a report of the status with respect to admission will be sent to each candidate.

Early filing of applications is recommended.

The University reserves the right to place any entering student upon an indefinite trial period.

Tuition Deposit

Applicants accepted for admission must upon request pay a nonreturnable tuition deposit of twenty-five dollars (\$25) as evidence of their bona fide intention to matriculate.

Registration

Eligibility for admission does not constitute registration. Freshmen will register at the University on Wednesday, September 3, 1952, and Wednesday, November 12, 1952. Students are not considered to have met the requirements for admission until they have successfully passed the required physical examination.

Advanced Standing

Students transferring from approved colleges will be admitted to advanced standing provided their records warrant it, and they are approved by the Co-operative Work Department in an interview scheduled in the late spring or summer previous to registration in September. Whenever a person enters with advanced standing and later proves to have inadequate preparation in any prerequisite subjects, the faculty reserves the right to require the student to make up such deficiencies.

Applicants seeking advanced standing should arrange to have transcripts of their previous college records forwarded with their initial inquiry.

Requirements for Graduation

Students may qualify for the degree of Bachelor of Science in Business Administration in one of the following options: Accounting, Industrial Relations, Marketing and Advertising, Finance and Insurance, and Business Management.

Candidates for the Bachelor of Science degree must complete all of the prescribed work of the curriculum in which they seek to qualify with a degree of proficiency acceptable to the faculty. Students who undertake co-operative work assignments must also meet the requirements of the Department of Co-operative Work before they become eligible for their degrees.

Students transferring from another college or university are not eligible to receive the B.S. degree until they have completed at least one academic year at Northeastern immediately preceding their graduation.

Scholarship Requirements

Students who fail to show satisfactory standards of general efficiency in their professional fields may be required to demonstrate their qualifications for the degree by taking such additional work as the faculty may prescribe. Those who are clearly unable to meet the accepted standard of attainment may be required to withdraw from the University. The degree conferred not only represents the formal completion of the subjects in the selected course of study but also indicates professional competence in the designated field of business administration.

R.O.T.C. Students

All physically qualified male freshmen may elect R.O.T.C. if they so desire. Students accepted for the R.O.T.C. will not be required to take Physical Training in Terms 1, 2, 3, and will be permitted to substitute advanced R.O.T.C. courses for certain upperclass academic work as approved by the Dean up to a maximum of 12 credits.

Graduation with Honor

Candidates who have achieved distinctly superior attainment in their academic work will be graduated with honor. Upon special vote of the faculty a limited number of this group may be graduated with high honor or with highest honor. Students must have been in attendance at the University at least three years before they may become eligible for honors at graduation.

Thesis Option

Theses are not required of candidates for the degree of Bachelor of Science in Business Administration. Students who show special aptitude for thesis work, however, may be permitted to substitute an appropriate thesis for equivalent work in class. Such permission must be obtained by the candidate from the Dean of the College.

The Programs of Study

First Year

A full year of thirty weeks is devoted to a survey of the economic, political, and social institutions that underlie the conduct of business.

The basic tool of business, the keeping of accounts, is introduced during the first year to provide a practical check upon the interest and capacity of each student in the College of Business Administration.

English is given an important place and other courses fill the personal needs of the student and prepare him for the more advanced work. Throughout the year each student has the friendly counsel and guidance of a faculty adviser whose aim is to help bridge the gap between high school and college.

Upperclass Years

Under the Northeastern five-year Co-operative Plan training on the job starts with the second year.

At the end of the second year, at the close of term 6, students formally elect their curricular options in accordance with their major fields of interest and natural aptitudes.

In each of terms 7, 10 and 13, students will elect certain nonprofessional courses. A student may, for instance, elect to take a series of courses in education or to take advanced courses in English, history, government, sociology, psychology, or to take particular courses in other fields of study. The list of elective subjects for each term will be somewhat limited by schedule conflicts with the prescribed program of study but as wide a selection as practicable will be offered.

During the last year all students attend a series of meetings designed to prepare them for entrance into the business world. Under expert guidance each student prepares a complete personnel record, studies himself and the opportunities that are open to him, and generally establishes himself for his "commencement."

The Professional Options

All students are required to take common courses which are deemed necessary for a well-rounded training. These are pursued jointly with the professional work which has been selected, with a view to meeting the changing and expanding needs of present-day business conduct, while at the same time meeting the vocational needs of the students by way of earning a living. A brief statement of the vocational opportunities in the fields of work represented by each of the professional options follows:

I. Accounting — Many successful careers are open to the professional accountants. Their services are demanded by business, commerce, industry, and government. Better known among the wide variety of titles descriptive of their work are public and private accountant, controller, cost accountant, resident and traveling auditor, credit manager, statistician, investigator, adjuster, and financial accountant.

II. Industrial Relations — The day is past when "anyone" can direct labor-management relations. A host of opportunities exist, therefore, in this field, the

human side of conducting a business. Both unions and management offer a wide selection of positions in personnel, bargaining, wage administration, and public relations. The government, too, has many openings for men and women who have taken this program of studies.

III. Marketing and Advertising — Business and industry must sell their services and products to each other and to the general public. Successful selling means more than being a salesman. It demands knowledge of distribution channels, markets and buying habits, as well as sales resistance. It means also knowing how to buy in order to sell and then how to organize, promote, and carry out a sales campaign.

The following list is representative of the vast array of marketing and advertising occupations: sales manager, supervisor, analyst and correspondent, advertising manager, promotion manager, copy supervisor, space buyer, and publicity director; market, product and sales analyst, industrial salesman, sales personnel supervisor, field representative, missionary salesman, manufacturer's agent, merchandise manager, and retail store operator.

IV. Finance and Insurance — Financial institutions serving present-day business and industry are its life stream. Any list of these organizations which are indispensable in the conduct of business must include banks, insurance companies, investment houses, credit concerns, financial exchanges, business forecasting organizations, financial service institutions, mortgage companies, national and local real estate brokerage firms, and appraisers.

The option in Finance and Insurance opens the door to a host of careers in these institutions as well as the many governmental agencies regulating their operations.

V. Business Management — This curriculum might be called the basic program of the College of Business Administration. Graduates in Business Management find posts in small business, big business, and public service.

Here is the field of training for the person whose ambition is to start a business of his own.

Here is the field of training for the person who is thinking in terms of production control, planning, methods analysis, purchasing, traffic control, or other supervisory and executive work.

Here is the field of training for the person who is keenly aware of the possibilities in public administration. Increased use of city-management plans and increased number and prestige of civil service careers present a wide group of opportunities to graduates of this program.

Commercial Education and Secretarial Studies

It is possible for qualified students in any of the above curricula to elect in terms 7, 10, and 13 certain courses in education offered by the College of Liberal Arts and to substitute courses in education in the senior year in order to qualify for a secondary school teaching certificate in business subjects and social studies.

Freshmen who desire to do so may elect a one-term course in typewriting as an extra course, without added tuition charge. Women students will be given the opportunity to take a sequence of courses in secretarial studies in order to qualify for executive secretarial positions or to teach in this field.

Prelegal Curriculum

Effective with students entering in the fall of 1952 the minimum requirements for admission to an accredited School of Law provide two programs of study. On the one hand, a student may apply for admission to a School of Law when he has completed one-half of the work accepted for the bachelor's degree in a college approved by the Board of Bar Examiners, and if he is accepted, he may qualify for his degree in law after four years at law school. On the other hand, a student may apply for admission to a School of Law when he has completed three-quarters of the work accepted for the bachelor's degree, and if he is accepted, he may qualify for his degree in law after three years at law school.

Recognizing that business education furnishes an excellent background for legal training, the College of Business Administration makes it possible for a student to qualify for admission to a School of Law by either of these methods. The faculties of the School of Law and the College of Business Administration of Northeastern University are convinced, however, that the best training in law for students in the College of Business Administration will result from following the combined program in business administration and law outlined below.

Combined Program Business Administration and Law

The combined curriculum in the College of Business Administration and the School of Law enables students to reduce by one year the time ordinarily required for obtaining the B.S. in Business Administration and the LL.B. degrees. Students who have completed before entering the School of Law at least 162 Northeastern credits of academic work, of which at least 108 must have been earned in the Northeastern University College of Business Administration, and who have fulfilled all other graduation requirements, will receive the B.S. degree in Business Administration upon the satisfactory completion of the full first year program in the Day Division of the School of Law. Students who enter the Evening Division of the School of Law will be eligible for the first degree upon satisfactory completion of the full equivalent of the first year of the day Law School program.

In both instances the first degree will be conferred at the next Commencement following determination of eligibility for the first degree.

Curriculum in Accounting

FIRST YEAR**

TERM 1					TERM 2					TERM 3						
Course	Cl.	Lab.	Pr.	Cr.	No.	Course	Cl.	Lab.	Pr.	Cr.	No.	Course	Cl.	Lab.	Pr.	Cr.
1 English	3	0	6	3	30-02 English	3	0	6	3	30-03 English	3	0	6	3		
1 Econ. Geog.	3	0	6	3	20-02 Econ. Geog.	3	0	6	3	20-03 Econ. Geog.	3	0	6	3		
1 Am. Govt.	3	0	6	3	22-02 Am. Govt.	3	0	6	3	22-03 Am. Govt.	3	0	6	3		
1 Prin. of Acct.	4	0	8	4	41-02 Prin. of Acct.	4	0	8	4	41-03 Prin. of Acct.	4	0	8	4		
1 Hist. Civil.	4	0	8	4	27-12 Hist. Civil.	4	0	8	4	27-13 Hist. Civil.	4	0	8	4		
0 Phys. Tr.	0	2	0	0	16-11 Phys. Tr.	0	2	0	0	16-12 Phys. Tr.	0	2	0	0		
	17	2	34	17		17	2	34	17		17	2	34	17		

SECOND YEAR

TERM 4*					TERM 5					TERM 6				
4 English Lit.	5	0	10	2½	43-21 Prin. of Mktg.	3	0	6	3	43-22 Prin. of Adv.	3	0	6	3
9 Int. to Stat.	3	6	9	3	44-20 Int. to Fin.	3	0	6	3	44-22 Prin. of Ins.	3	0	6	3
Graphic Pres.														
4 Hist. Civil.	4	0	8	2	45-21 Ind. Mgt.	3	0	6	3	45-22 Ind. Mgt.	3	0	6	3
					41-25 Prin. of Acct.	4	0	8	4	41-26 Inter. Acct.	4	0	8	4
					25-01 Int. to Psych.	4	0	8	4	25-02 Gen. Psych.	4	0	8	4
	12	6	27	7½		17	0	34	17		17	0	34	17

THIRD YEAR

TERM 7*					TERM 8					TERM 9				
3 Econ. Prin.	10	0	20	5	20-14 Econ. Prob.	4	0	8	4	20-15 Econ. Prob.	4	0	8	4
Elective	5	0	10	2½	44-31 Bus. Finance	4	0	8	4	44-32 Bus. Finance	4	0	8	4
					41-37 Int. Acct.	2	2	5	3	41-38 Int. Acct.	2	2	5	3
					41-31 Cost Acct.	6	0	12	6	41-32 Cost Acct.	6	0	12	6
	15	0	30	7½		16	2	33	17		16	2	33	17

FOURTH YEAR

TERM 10*					TERM 11					TERM 12				
0s Probs. in Wr.	5	0	10	2½	20-20 Statistics	3	2	7	4	20-21 Statistics	3	2	7	4
Elective	5	0	10	2½						46-42 Bus. Law II	4	0	8	4
Elective	5	0	10	2½	46-41 Bus. Law I	4	0	8	4	30-06 Public Spkg.	4	0	8	4
					30-05 Public Spkg.	4	0	8	4	20-26a Labor Econ.	3	0	6	3
					41-45 Adv. Acct. Pr. A	2	2	5	3	41-47 Adv. Acct. Pr. C	2	2	5	3
					41-46 Adv. Acct. Pr. B	2	2	5	3					
	15	0	30	7½		15	6	33	18		16	4	34	18

FIFTH YEAR

TERM 13*					TERM 14					TERM 15				
3s Bus. Comm.	5	0	10	2½	20-40 Bus. & Govt.	4	0	8	4	20-28 Comp. Ec. Sys.	4	0	8	4
Elective	5	0	10	2½	46-51 Bus. Law III	4	0	8	4	46-52 Bus. Law IV	4	0	8	4
Elective	5	0	10	2½	46-53 Inc. Tax Laws	3	0	6	3	46-54 Inc. Tax Laws	3	0	6	3
					41-50 Fiduciary Acct.	2	2	5	3	41-51 System B'd'g	2	2	5	3
					41-43 Auditing	2	2	5	3	41-44 Auditing	2	2	5	3
	15	0	30	7½		15	4	32	17		15	4	32	17

Summer term — 5 weeks.

Physically qualified male freshmen may elect R.O.T.C. if they so desire. Students accepted for the R.O.T.C. will not be required to take Physical Training in Terms 1, 2, 3, and will be permitted to substitute advanced R.O.T.C. courses for certain upperclass academic work as approved by the Dean up to a maximum of credits.

Curriculum in Industrial Relations

FIRST YEAR**

TERM 1					TERM 2					TERM 3							
No.	Course	Cl.	Lab.	Pr.	Cr.	No.	Course	Cl.	Lab.	Pr.	Cr.	No.	Course	Cl.	Lab.	Pr.	Cr.
30-01	English	3	0	6	3	30-02	English	3	0	6	3	30-03	English	3	0	6	3
20-01	Econ. Geog.	3	0	6	3	20-02	Econ. Geog.	3	0	6	3	20-03	Econ. Geog.	3	0	6	3
22-01	Am. Govt.	3	0	6	3	22-02	Am. Govt.	3	0	6	3	22-03	Am. Govt.	3	0	6	3
41-01	Prin. of Acct.	4	0	8	4	41-02	Prin. of Acct.	4	0	8	4	41-03	Prin. of Acct.	4	0	8	4
27-11	Hist. Civil.	4	0	8	4	27-12	Hist. Civil.	4	0	8	4	27-13	Hist. Civil.	4	0	8	4
16-10	Phys. Tr.	0	2	0	0	16-11	Phys. Tr.	0	2	0	0	16-12	Phys. Tr.	0	2	0	0
<hr/>					<hr/>					<hr/>							
17					2	34	17	17					2	34	17		

SECOND YEAR

TERM 4*					TERM 5					TERM 6				
30-04 English Lit.	5	0	10	2½	43-21 Prin. of Mktg.	3	0	6	3	43-22 Prin. of Adv.	3	0	6	3
20-09 Int. to Stat.	3	6	9	3	44-20 Int. to Fin.	3	0	6	3	44-22 Prin. of Ins.	3	0	6	3
Graphic Pres.														
27-14 Hist. Civil.	4	0	8	2	45-21 Ind. Mgt.	3	0	6	3	45-22 Ind. Mgt.	3	0	6	3
					41-25 Prin. of Acct.	4	0	8	4	41-27 Acctg. State.	4	0	8	4
					25-01 Int. to Psych.	4	0	8	4	25-02 Gen. Psych.	4	0	8	4
<hr/>					<hr/>					<hr/>				
12					17					17				
6					0					0				
27					34					34				
7½					17					17				

THIRD YEAR

TERM 7*					TERM 8					TERM 9				
20-13 Econ. Prin.	10	0	20	5	20-14 Econ. Prob.	4	0	8	4	20-15 Econ. Prob.	4	0	8	4
26-07s Sociology	5	0	10	2½	44-31 Bus. Finance	4	0	8	4	44-32 Bus. Finance	4	0	8	4
					30-05 Public Spkg.	4	0	8	4	30-06 Public Spkg.	4	0	8	4
					45-33 Mgt. Probs.	3	0	6	3	45-34 Mgt. Probs.	3	0	6	3
					25-35 Ind. Psych.	3	0	6	3	25-36 Ind. Psych.	3	0	6	3
	15	0	30	7½		18	0	36	18		18	0	36	18

FOURTH YEAR

TERM 10*					TERM 11					TERM 12							
41-33	Cost for Mgt.	10	0	20	5	20-20	Statistics	3	2	7	4	20-21	Statistics	3	2	7	4
	Elective	5	0	10	2½	20-18	Am. Ec. Hist.	4	0	8	4	42-44	Wage Adm.	4	0	8	4
						46-41	Bus. Law I	4	0	8	4	46-42	Bus. Law II	4	0	8	4
						20-26a	Labor Econ.	3	0	6	3	42-17	Prob. in Pers.	3	0	6	3
						30-10	Probs. in Wr.	3	0	6	3	30-08	Bus. Comm.	3	0	6	3
<hr/>					<hr/>					<hr/>							
15					0	30	7½	17					2	35	18	<hr/>	

FIFTH YEAR

TERM 13*					TERM 14					TERM 15				
30-07B Conf. Lead.	8	0	7	2½	20-40 Bus. & Govt.	4	0	8	4	20-28 Comp. Ec. Sys.	4	0	8	4
41-42S Bud. Proc.	5	0	10	2½	25-19 Measurements	4	0	8	4	46-52 Bus. Law IV	4	0	8	4
Elective	5	0	10	2½	46-55 Labor Law	3	0	6	3	42-62 Sem. Col. Bg.	4	0	8	4
					42-52 Mot. & Time	2	2	5	3	45-30 Prod. Proc.	4	0	8	4
					20-25a Bus. Cycles	3	0	6	3					
	18	0	27	7½		16	2	33	17		16	0	32	17

*Summer term — 5 weeks.

**All physically qualified male freshmen may elect R.O.T.C. if they so desire. Students accepted for the R.O.T.C. will not be required to take Physical Training in Terms 1, 2, 3, and will be permitted to substitute advanced R.O.T.C. courses for certain upperclass academic work as approved by the Dean up to a maximum of 12 credits.

Curriculum in Marketing and Advertising

FIRST YEAR**

TERM 1					TERM 2					TERM 3						
Course	Cl.	Lab.	Pr.	Cr.	No.	Course	Cl.	Lab.	Pr.	Cr.	No.	Course	Cl.	Lab.	Pr.	Cr.
English	3	0	6	3	30-02	English	3	0	6	3	30-03	English	3	0	6	3
Econ. Geog.	3	0	6	3	20-02	Econ. Geog.	3	0	6	3	20-03	Econ. Geog.	3	0	6	3
Am. Govt.	3	0	6	3	22-02	Am. Govt.	3	0	6	3	22-03	Am. Govt.	3	0	6	3
Prin. of Acct.	4	0	8	4	41-02	Prin. of Acct.	4	0	8	4	41-03	Prin. of Acct.	4	0	8	4
Hist. Civil.	4	0	8	4	27-12	Hist. Civil.	4	0	8	4	27-13	Hist. Civil.	4	0	8	4
Phys. Tr.	0	2	0	0	16-11	Phys. Tr.	0	2	0	0	16-12	Phys. Tr.	0	2	0	0
	17	2	34	17			17	2	34	17			17	2	34	17

SECOND YEAR

TERM 4*					TERM 5					TERM 6				
English Lit.	5	0	10	2½	43-21 Prin. of Mktg.	3	0	6	3	43-22 Prin. of Adv.	3	0	6	3
Int. to Stat.	3	6	9	3	44-20 Int. to Fin.	3	0	6	3	44-22 Prin. of Ins.	3	0	6	3
Graphic Pres.														
Hist. Civil.	4	0	8	2	45-21 Ind. Mgt.	3	0	6	3	45-22 Ind. Mgt.	3	0	6	3
					41-25 Prin. of Acct.	4	0	8	4	41-27 Acct. State.	4	0	8	4
					25-01 Int. to Psych.	4	0	8	4	25-02 Gen. Psych.	4	0	8	4
	12	6	27	7½		17	0	34	17		17	0	34	17

THIRD YEAR

TERM 7*					TERM 8					TERM 9				
Econ. Prin.	10	0	20	5	20-14 Econ. Probs.	4	0	8	4	20-15 Econ. Probs.	4	0	8	4
S Sociology	5	0	10	2½	30-05 Public Spkg.	4	0	8	4	30-06 Public Spkg.	4	0	8	4
					43-30 Salesmans'p	4	0	8	4	43-32 Sales Mgt.	6	0	12	6
					43-31 Copy Wtg.	2	0	4	2					
					44-31 Bus. Finance	4	0	8	4	44-32 Bus. Finance	4	0	8	4
	15	0	30	7½		18	0	36	18		18	0	36	18

FOURTH YEAR

TERM 10*					TERM 11					TERM 12				
Prob. in Wr.	5	0	10	2½	20-20 Statistics	3	2	7	4	20-21 Statistics	3	2	7	4
Elective	5	0	10	2½	20-18 Am. Ec. Hist.	4	0	8	4	43-40 Advtg. Prod.	4	0	5	3
Elective	5	0	10	2½	46-41 Bus. Law I	4	0	8	4	46-42 Bus. Law II	4	0	8	4
					30-07B Conf. Lead.	3	0	3	2	43-44 For. Mktg.	3	0	6	3
					43-43 Mktg. Res.	4	0	8	4	43-46 Cr. & Coll.	3	0	6	3
	15	0	30	7½		18	2	34	18		17	2	32	17

FIFTH YEAR

TERM 13*					TERM 14					TERM 15				
Bus. Comm.	5	0	10	2½	20-40 Bus. & Govt.	4	0	8	4	20-28 Comp. Ec. Sys.	4	0	8	4
Elective	5	0	10	2½	46-51 Bus. Law III	4	0	8	4	46-52 Bus. Law IV	4	0	8	4
Elective	5	0	10	2½	43-61 Seminar	3	0	6	3	43-52 Ret. Merch.	4	0	8	4
					43-53 Prob. in Adv.	3	0	6	3	43-54 Prob. in Adv.	4	0	8	4
					26-13a Soc. Ethics	3	0	6	3	or				
										43-62 Seminar in Mktg.	4	0	8	4
	15	0	30	7½		17	0	34	17		16	0	32	16

*Summer term — 5 weeks.

Physically qualified male freshmen may elect R.O.T.C. if they so desire. Students accepted for the R.O.T.C. are not required to take Physical Training in Terms 1, 2, 3, and will be permitted to substitute advanced R.O.T.C. courses for certain upperclass academic work as approved by the Dean up to a maximum of 6 credits.

Curriculum in Finance and Insurance

FIRST YEAR**

TERM 1				TERM 2				TERM 3			
No.	Course	Cl.	Lab.Pr.Cr.	No.	Course	Cl.	Lab.Pr.Cr.	No.	Course	Cl.	Lab.Pr.Cr.
30-01	English	3	0	6	3	30-02	English	3	0	6	3
20-01	Econ. Geog.	3	0	6	3	20-02	Econ. Geog.	3	0	6	3
22-01	Am. Govt.	3	0	6	3	22-02	Am. Govt.	3	0	6	3
41-01	Prin. of Acct.	4	0	8	4	41-02	Prin. of Acct.	4	0	8	4
27-11	Hist. Civil.	4	0	8	4	27-12	Hist. Civil.	4	0	8	4
16-10	Phys. Tr.	0	2	0	0	16-11	Phys. Tr.	0	2	0	0
		17	2	34	17			17	2	34	17

SECOND YEAR

TERM 4*				TERM 5				TERM 6			
30-04	English Lit.	5	0	10	2½	43-21	Prin. of Mktg.	3	0	6	3
20-09	Int. to Stat.	3	6	9	3	44-20	Int. to Fin.	3	0	6	3
	Graphic Pres.										
27-14	Hist. Civil.	4	0	8	2	45-21	Ind. Mgt.	3	0	6	3
						41-25	Prin. of Acct.	4	0	8	4
						25-01	Int. to Psych.	4	0	8	4
		12	6	27	7½			17	0	34	17

THIRD YEAR

TERM 7*				TERM 8				TERM 9			
20-13	Prin. of Econ.	10	0	20	5	20-14	Econ. Probs.	4	0	8	4
26-07s	Sociology	5	0	10	2½	44-31	Bus. Finance	4	0	8	4
						44-33	Ins. Probs.	3	0	6	3
						30-05	Public Spkg.	4	0	8	4
						41-30	Anal. Fin. St.	2	2	5	3
		15	0	30	7½			17	2	35	18

FOURTH YEAR

TERM 10*				TERM 11				TERM 12			
30-10	Probs. in Wr.	5	0	10	2½	20-20	Statistics	3	2	7	4
	Elective	5	0	10	2½	20-18	Am. Ec. Hist.	4	0	8	4
	Elective	5	0	10	2½	46-41	Bus. Law I	4	0	8	4
						44-41	Invest. I	3	0	6	3
						44-43	Math. of Fin.	3	0	6	3
		15	0	30	7½			17	2	35	18

FIFTH YEAR

TERM 13				TERM 14				TERM 15			
30-08	Bus. Comm.	5	0	10	2½	20-40	Bus. & Govt.	4	0	8	4
30-07B	Conf. Lead.	8	0	7	2½	46-51	Bus. Law III	4	0	8	4
	Elective	5	0	10	2½	20-25a	Bus. Cycles	3	0	6	3
						44-51	Trust Mgt.	3	0	6	3
						26-13a	Soc. Ethics	3	0	6	3
		18	0	27	7½			17	0	34	17

*Summer term — 5 weeks.

**All physically qualified male freshmen may elect R.O.T.C. if they so desire. Students accepted for the R.O.T.C. will not be required to take Physical Training in Terms 1, 2, 3, and will be permitted to substitute advanced R.O.T.C. courses for certain upperclass academic work as approved by the Dean up to a maximum of 12 credits.

Curriculum in Business Management

FIRST YEAR**																
TERM 1					TERM 2					TERM 3						
Course	Cl.	Lab.	Pr.	Cr.	No.	Course	Cl.	Lab.	Pr.	Cr.	No.	Course	Cl.	Lab.	Pr.	Cr.
English	3	0	6	3	30-02	English	3	0	6	3	30-03	English	3	0	6	3
Econ. Geog.	3	0	6	3	20-02	Econ. Geog.	3	0	6	3	20-03	Econ. Geog.	3	0	6	3
Am. Govt.	3	0	6	3	22-02	Am. Govt.	3	0	6	3	22-03	Am. Govt.	3	0	6	3
Prin. of Acct.	4	0	8	4	41-02	Prin. of Acct.	4	0	8	4	41-03	Prin. of Acct.	4	0	8	4
Hist. Civil.	4	0	8	4	27-12	Hist. Civil.	4	0	8	4	27-13	Hist. Civil.	4	0	8	4
Phys. Tr.	0	2	0	0	16-11	Phys. Tr.	0	2	0	0	16-12	Phys. Tr.	0	2	0	0
	17	2	34	17			17	2	34	17			17	2	34	17
SECOND YEAR																
TERM 4*					TERM 5					TERM 6						
English Lit.	5	0	10	2½	43-21	Prin. of Mktg.	3	0	6	3	43-22	Prin. of Adv.	3	0	6	3
Int. to Stat.	3	6	9	3	44-20	Int. to Fin.	3	0	6	3	44-22	Prin. of Ins.	3	0	6	3
Graphic Pres.																
Hist. Civil.	4	0	8	2	45-21	Ind. Mgt.	3	0	6	3	45-22	Ind. Mgt.	3	0	6	3
					41-25	Prin. of Acct.	4	0	8	4	41-27	Acctg. State.	4	0	8	4
					25-01	Int. to Psych.	4	0	8	4	25-02	Gen. Psych.	4	0	8	4
	12	6	27	7½			17	0	34	17			17	0	34	17
THIRD YEAR																
TERM 7*					TERM 8					TERM 9						
Econ. Prin.	10	0	20	5	20-14	Econ. Probs.	4	0	8	4	20-15	Econ. Probs.	4	0	8	4
Elective	5	0	10	2½	44-31	Bus. Finance	4	0	8	4	44-32	Bus. Finance	4	0	8	4
					30-05	Public Spkg.	4	0	8	4	30-06	Public Spkg.	4	0	8	4
					25-35a	Ind. Psych.	3	0	6	3	25-36a	Ind. Psych.	3	0	6	3
					45-33	Mtg. Probs.	3	0	6	3	45-34	Mgt. Probs.	3	0	6	3
	15	0	30	7½			18	0	36	18			18	0	36	18
FOURTH YEAR																
TERM 10*					TERM 11					TERM 12						
Cost for Mgt.	10	0	20	5	20-20	Statistics	3	2	7	4	20-21	Statistics	3	2	7	4
Elective	5	0	10	2½	20-18	Am. Ec. Hist.	4	0	8	4	43-46	Cred. & Coll.	3	0	6	3
					46-41	Bus. Law I	4	0	8	4	46-42	Bus. Law II	4	0	8	4
					20-26a	Labor Ec.	3	0	6	3	42-44	Wage Adm.	4	0	8	4
					30-10	Probs. in Wr.	3	0	6	3	30-08	Bus. Comm.	3	0	6	3
	15	0	30	7½			17	2	35	18			17	2	35	18
FIFTH YEAR																
TERM 13*					TERM 14					TERM 15						
Budget Proc.	5	0	10	2½	20-40	Bus. & Govt.	4	0	8	4	46-52	Bus. Law IV	4	0	8	4
Conf. Lead.	8	0	7	2½	46-51	Bus. Law III	4	0	8	4	43-52	Retail Merch.	4	0	8	4
Elective	5	0	10	2½	43-43	Mktg. Res.	4	0	8	4						
					45-52	Mgt. of Sales	2	0	4	2	20-28	Comp. Ec. Sys.	4	0	8	4
					42-52	Mot. & Time	2	2	5	3	45-30	Prod. Proc.	4	0	8	4
					or						or					
					45-51	Office Mgt.	3	0	6	3	Elective		4	0	8	4
	18	0	27	7½			16	0	33	17			16	0	32	16
							or 17	2	34							

Summer term — 5 weeks.

Physically qualified male freshmen may elect R.O.T.C. if they so desire. Students accepted for the R.O.T.C. are not required to take Physical Training in Terms 1, 2, 3, and will be permitted to substitute advanced R.O.T.C. courses for certain upperclass academic work as approved by the Dean up to a maximum of 6 credits.

NORTHEASTERN UNIVERSITY

COLLEGE OF
ENGINEERING

Admission Requirements and Courses of Study
**Undergraduate Curricula*

1952-1953



(COEDUCATIONAL)

*Evening graduate engineering programs are described in a separate catalog

BOSTON 15, MASSACHUSETTS
JANUARY, 1952

THE COLLEGE OF ENGINEERING

Aims and Methods

It is the purpose of the College of Engineering to provide educational programs which will effectively prepare students to become professional practitioners, to enter graduate schools, or to accept employment in the many industrial fields in which an engineering background is helpful. Principally concerned with undergraduate instruction, the College is operated upon the Co-operative Plan and offers five year curricula leading to the baccalaureate degree in civil, mechanical, electrical, chemical, and industrial engineering.

The academic program begins with a 30 week freshman year of full time study during which the student continues to build the foundation in mathematics, the physical sciences, and means of expression that were begun in high school. Co-operative work in the same general field of engineering for which he is preparing begins with the second year and continues throughout the upperclass program. Thus the student has an opportunity to gain some insight into problems of actual engineering practice as he progresses through the course of study at the college.

In keeping with recent trends in engineering education, the co-operative curricula at Northeastern comprise a balanced sequence of courses in which the technological disciplines occupy about four-fifths of the student's program and the humanistic or general studies about one-fifth. These two aspects of the undergraduate curriculum are integrated throughout the entire five years so that growth in cultural understanding proceeds hand in hand with development of technical knowledge and skill. This plan, widely utilized in engineering education, is quite different from that in legal or medical education in which the general studies precede the professional training, but it has proved to be highly effective in the preparation of engineers and industrial leaders.

The courses of study in the first year are identical for all engineering students and it is possible for any of them to change his curriculum at the end of the freshman year without loss of time. Emphasis throughout all curricula is laid upon fundamental concepts and skills so that the student may develop an adequate foundation upon which to base his professional development. In the undergraduate programs relatively little time can be devoted to courses in specialized aspects of current engineering practice. These must in the main be given in graduate schools where specialization is appropriate and possible.

Undergraduate curricula at Northeastern are designed to develop young men and women with well-balanced personal qualities, a sense of civic responsibility, an understanding of industrial job requirements, and a technical competence sufficient to begin a professional career. Instruction both in the classroom and in the laboratory is designed to place maximum emphasis upon individual initiative and responsibility and to develop the student's powers of analysis.

Because an engineering education teaches the student to search out the truth, to think clearly, and to formulate conclusions based upon a solid foundation of facts, engineers are being called upon more and more to occupy positions of responsibility in the management of our great industrial enterprises. Even in such diverse fields as banking, public health, and public administration, this so-called engineering approach is in demand.

Although no graduate engineering curricula are offered during the day, the

College does have an evening program of graduate studies for young engineers employed in the Greater Boston area. These graduate curricula in certain fields of civil, mechanical, and electrical engineering lead to the degree of Master of Science in Engineering.

Admission Requirements

Applicants for admission to the freshman class must qualify by graduation from an approved course of study in an accredited secondary school, including prescribed subjects listed below.

Applicants are not required to take entrance examinations in high school subjects, but all candidates for the freshman class are asked to come to North-eastern University to take scholastic aptitude tests.

In the event that the distance to Boston from an applicant's place of residence is great, the Committee on Admissions is willing under certain conditions to make a decision on test results submitted by the College Entrance Examination Board.

Prescribed Subjects for Admission College of Engineering

Algebra (quadratics and beyond)	2 units
Plane geometry	1 unit
Physics	1 unit
Science, social studies, mathematics and/or foreign language	6 units
English (four years)	3 units
Electives	2 units
<hr/>	
Total	15 units

A unit is a credit given to an acceptable secondary school course which meets at least four times a week for periods of not less than forty minutes each throughout the school year.

Other Requirements

These formal requirements are necessary and desirable in that they tend to provide all entering students with a common ground upon which the first year of the college curriculum can be based. But academic credits alone are not an adequate indication of a student's ability to profit by a college education. Consequently, the Department of Admissions takes into consideration, along with the formal requirements stated above, other factors regarding candidates for the freshman class. A student's interests and aptitudes in so far as these can be determined, capacity for hard work, attitude toward classmates and teachers in high school, physical stamina, and most important of all, character, are considered. In this way the University seeks to select for its student body those who not only meet the academic admission requirements but who also give promise of acquitting themselves creditably in the rigorous program of training afforded by the Co-operative Plan and of being useful members of society.

Personal Interview

A personal interview is always preferred to correspondence, and parents are urged to accompany the applicant whenever this is possible. Effective guidance

depends in large measure upon a complete knowledge of a student's background and problems. Parents invariably are able to contribute information that aids the admissions officer in arriving at a decision.

Applicants who come from a distance are advised to write in advance to see if it is possible to arrange for an interview and for the required scholastic aptitude tests on the same day. The examinations are scheduled only on Saturday mornings, at dates to be announced. Office hours are from 9:00 A.M. to 4:00 P.M. daily; Saturdays to 12:00 M. The Department of Admissions will interview applicants on Wednesday evenings but by appointment only.

Application for Admission

Each applicant for admission is required to fill out an application blank stating previous education as well as the names of persons to whom reference may be made.

A fee of five dollars (\$5.00) is required when the application is filed. This fee is nonreturnable.

The last page of this catalog is in the form of an application blank. It should be filled out in ink and forwarded with the required five-dollar fee to Director of Admissions, Northeastern University, Boston 15, Massachusetts. Checks should be made out to Northeastern University.

Upon receipt of the application, properly filled out, the University secures the references and secondary school record. Applicants having satisfactory secondary school records are notified to report to the University to take special scholastic aptitude tests. As soon as possible after the Committee on Admissions has reviewed the results of these tests, a report of status with respect to admission will be sent to each candidate.

Early filing of applications is recommended.

The University reserves the right to place any entering student upon an indefinite trial period.

Tuition Deposit

Applicants accepted for admission must upon request pay a nonreturnable tuition deposit of twenty-five dollars (\$25) as evidence of their bona fide intention to matriculate.

Registration

Eligibility for admission does not constitute registration. Freshmen will register at the University on Wednesday, September 3, 1952, and Wednesday, November 12, 1952. Students are not considered to have met the requirements for admission until they have successfully passed the required physical examination.

Advanced Standing

Students transferring from approved colleges will be admitted to advanced standing provided their records warrant it, and they are approved by the Co-operative Work Department in an interview scheduled in the late spring or summer previous to registration in September. Whenever a person enters with advanced standing and later proves to have had inadequate preparation in any prerequisite subjects, the faculty reserves the right to require the student to make up such deficiencies.

Applicants seeking advanced standing should arrange to have transcripts of their previous college records forwarded with their initial inquiry.

Graduation Requirements

The College of Engineering offers five-year curricula, conducted on the Co-operative Plan, leading to the following degrees:

1. Bachelor of Science in Civil Engineering
2. Bachelor of Science in Mechanical Engineering
3. Bachelor of Science in Electrical Engineering
4. Bachelor of Science in Chemical Engineering
5. Bachelor of Science in Industrial Engineering

These curricula are described in the following pages. Since the first year is the same for all engineering students, final choice of curriculum need not be made until the beginning of the second year.

Candidates for the Bachelor of Science degree must complete all of the prescribed work of the curriculum in which they seek to qualify. A total of 232 credit hours (equivalent to 145 semester hours) is required for the degree. Students who undertake co-operative work assignments must meet the requirements of the Department of Co-operative Work before they become eligible for their degrees.

No student transferring from another college or university is eligible to receive the S.B. degree until he has completed at least one academic year at Northeastern immediately preceding his graduation.

R.O.T.C. Students

All physically qualified male freshmen may elect R.O.T.C. if they so desire. Students accepted for the R.O.T.C. will not be required to take Physical Training in Terms 1, 2, 3, and will be permitted to substitute advanced R.O.T.C. courses for certain upperclass academic work as approved by the Dean up to a maximum of 12 credits.

Scholarship Requirements

Students who fail to show a satisfactory standard of general efficiency in their professional fields may be required to demonstrate their qualifications for the degree by taking such additional work as the faculty may prescribe. If they are clearly unable to meet the accepted standard of attainment, they may be required to withdraw from the University.

Since the degree must represent competence in the student's chosen professional field, it cannot be awarded for mere low grade completion of the required courses.

Graduation with Honor

Candidates who have achieved distinctly superior attainment in their academic work will be graduated with honor. Upon special vote of the faculty a limited number of this group may be graduated with high honor or with highest honor. Students must have been in attendance at the University at least three years before they may become eligible for honors at graduation.

Engineering Curricula

Civil Engineering

The field of civil engineering has to do with the planning and building of all kinds of structures and public works. None of the structures of civil engineers lend themselves to quantity production in a factory. Not only are civil engineering works designed to fit a single location, but ordinarily their value is dependent upon their ability to resist forces tending to move them.

Civil engineering is as old as civilization itself and, until recent times, it embraced all phases of engineering except those of a military character. Today its major branches include topographical, municipal, railroad, highway, structural, hydraulic, and sanitary engineering. It covers land surveying, the building of railroads, soil mechanics, harbors, docks, and similar structures, the construction of sewers, water works, streets, and highways, the design and construction of flood control projects, bridges, buildings, walls, foundations, and all fixed structures.

Because civil engineering covers such a broad field, it is not possible to become expert in all its branches. All of these, however, rest upon a relatively compact body of principles and, broadly speaking, it may be said that the civil engineer deals largely with accurate descriptions of locations (surveys) and with applications of the mechanics of resistance to motion (statics).

Since the first step in every civil engineering project involves accurate measurement of the surface features of the land, of the nature of the soil, and of the character of the underlying rock, the study of surveying and related subjects occupies a large place in the civil engineering curriculum. And since the primary consideration in designing any structure is to make certain that it will withstand safely any force to which it may be subjected, the mechanics of static bodies, strength of materials, and theory of structures are studied in detail. The curriculum is thus intended to prepare the young civil engineer to take up the work of design and construction of structures, to solve the problems of water supply and waste disposal in urban areas, and to undertake intelligently the supervision of work in allied fields of engineering and in general contracting.

Upon graduation, the young engineer may expect a period of apprenticeship either in the field, surveying and plotting, or in the office, over the drafting board. As experience is gained, the graduate is entrusted with greater responsibilities in actual design and supervision of construction. Those who prefer a roving existence should direct their ambitions toward private fields, while those who prefer a stable home and community life will seek opportunities in the public service of the Federal Government and the various states and municipalities.

Curriculum in Civil Engineering

FIRST YEAR**

TERM 1					TERM 2					TERM 3							
No.	Course	Cl.	Lab.	Pr. Cr.	No.	Course	Cl.	Lab.	Pr. Cr.	No.	Course	Cl.	Lab.	Pr. Cr.			
1-01	Chemistry	3	3	6	4	11-02	Chem.	3	3	6	4	11-03	Chem.	3	3	6	4
1-01	Drawing	0	6	3	3	12-02	Drawing	0	6	3	3	12-03	Drawing	0	6	3	3
1-01	Math.	5	0	7	4	14-02	Math.	5	0	7	4	14-03	Math.	5	0	10	5
1-01	Physics	3	0	6	3	15-02	Physics	3	0	6	3	15-03	Physics	3	0	6	3
1-01	English	3	0	6	3	30-02	English	3	0	6	3	30-03	English	3	0	6	3
1-10	Phys. Tr.	0	2	0	0	16-11	Phys. Tr.	0	2	0	0	16-12	Phys. Tr.	0	2	0	0
<hr/>					<hr/>					<hr/>							
14 11 28 17					14 11 28 17					14 11 31 18							

SECOND YEAR

TERM 4*					TERM 5					TERM 6				
-04 Chemistry	3	3	6	2	20-11 Econ.	3	0	6	3	20-12 Econ.	3	0	6	3
-04 Physics	3	0	6	1½	14-05 Diff. Calc.	4	0	8	4	14-06 Int. Calc.	4	0	8	4
-04 Math.	5	0	10	2½	15-05 Physics	3	3	6	4	15-06 Physics	3	3	6	4
-05 Am. Hist.	6	0	12	3	3-01 Elec. Eng.	3	0	6	3	3-02 Elec. Eng.	3	0	6	3
					1-10 Surveying	4	3	5	4	2-20 App. Mech.	4	0	8	4
	17	3	34	9		17	6	31	18		17	3	34	18

THIRD YEAR

TERM 7*					TERM 8					TERM 9				
-05 Am. Govt.	4	0	8	2	14-07 Diff. Eq.	4	0	5	3	1-60 Cons. Costs	3	0	6	3
-30 Pwr. Pl. Eq.	5	0	10	2½	2-21 App. Mech.	3	0	6	3	2-22 Sgth. of Matls.	4	0	8	4
-04 Mach. Draw.	0	9	3	2	2-31 Thermo.	3	0	6	3	1-20 Hydraulics	3	0	6	3
-50 Prod. Proc.	5	0	10	2½	1-11 Surveying	4	3	5	4	1-12 Surveying	4	3	5	4
					13-01 Gen. Geol.	3	0	6	3	1-58 Eng. Geol.	4	0	8	4
					2-40 Materials	2	0	4	2					
	14	9	31	9		19	3	32	18		18	3	33	18

FOURTH YEAR

TERM 10*					TERM 11					TERM 12				
-07 Effec. Spkg.	6	0	12	3	2-23 Sgth. of Mtls.	3	0	6	3	1-54 Des. of Struc.	2	4	0	2
-13 Surveying	0	18	0	3	1-40 Struct. Anal.	3	0	6	3	1-41 Struct. Anal.	4	0	8	4
-17 Literature	6	0	12	3	1-49 Conc. T. Lab.	1	4	4	3	1-50 Concrete	3	0	6	3
					1-21 Hydraulics	3	0	6	3	2-64 Test. Mat. L.	1	4	4	3
					44-13 Cons. Fin.	3	0	6	3	2-24 Adv. Mech.	3	0	6	3
					24-07 Philosophy					24-08 Philosophy				
					or					or				
					25-07 Psychology	3	0	6	3	25-08 Psychology	3	0	6	3
	12	18	24	9		16	4	34	18		16	8	30	18

FIFTH YEAR

TERM 13*					TERM 14					TERM 15				
-03 Contracts & Agency	6	0	12	3	1-42 Struct. Anal.	3	0	6	3	1-43 Struct. Anal.	4	0	8	4
-06 Municipal Gvt.					1-51 Concrete	3	0	6	3	1-57 Found. Eng.	2	0	4	2
or					1-55 Des. of Struc.	3	6	0	3	1-56 Des. of Struc.	0	9	0	3
-06 Rec. Eur. His.	6	0	12	3	1-24 San. Eng.	3	0	6	3	1-25 San. Eng.	3	3	6	4
-18 Literature	6	0	12	3	1-30 Transp.	4	0	5	3	1-31 Transp.	2	0	4	2
					50-01 Prof. Dvlpmt.	3	0	6	3	22-08 Cur. Pol. Iss.				
										or				
										23-08 Cont. Orient	3	0	6	3
	18	0	36	9		19	6	29	18		14	12	28	18

Summer term — 5 weeks.

All physically qualified male freshmen may elect R.O.T.C. if they so desire. Students accepted for the R.O.T.C. will not be required to take Physical Training in Terms 1, 2, 3, and will be permitted to substitute advanced R.O.T.C. courses for certain upperclass academic work as approved by the Dean up to a maximum of 12 credits.

Mechanical Engineering

The field of mechanical engineering is concerned with the harnessing of power resources by means of machinery to perform useful work. With the increasing mechanization of all industry which has taken place during the last century, the field has so broadened as to include all lines of industry.

In contrast to the civil engineer who deals primarily with static forces, the mechanical engineer is more concerned with the mechanics of motion or kinetics. And because moving parts require constant care and adjustment, the mechanical engineer has the task not only of designing and installing complicated machinery but also of operating it efficiently after it has been installed.

Among the major branches of mechanical engineering are included combustion or power production engineering, machine and machine-tool design, railway mechanical engineering, automotive engineering, aeronautical engineering, refrigerating engineering, and air conditioning engineering. The construction and operation of furnaces, boilers, and engines, the design of all kinds of machinery from pocket watches to steel mills, the construction and operation of railway and other transportation equipment including automobiles and airplanes, and even control of atmospheric conditions by means of heating, and air conditioning equipment, all fall in this field.

Since machinery is so predominantly the concern of the mechanical engineer, the program of study is designed to give the student considerable training in the principles underlying the design and operation of engines, power transmission devices, machine tools, and other machinery. This, of course, implies a thorough study of the physical laws concerning motion and transfer of energy. Applied mechanics and thermodynamics occupy a prominent place in the curriculum. The program of instruction thus gives the student a broad foundation in those fundamental subjects essential to all engineering practice and, in the senior year, provides for limited specialization.

For those students desiring to specialize in the field of industrial management, attention is called to the curriculum in industrial engineering, the basic training of which is essentially the same as that in mechanical engineering.

The graduate mechanical engineer generally finds employment in an industrial plant, either in design and research or in plant operation and maintenance. And if his abilities lie in that direction, he frequently is entrusted after a time with greater and greater responsibility for the successful management of the enterprise.

Curriculum in Mechanical Engineering

FIRST YEAR**

TERM 1						TERM 2						TERM 3					
No.	Course	Cl.	Lab.	Pr.	Cr.	No.	Course	Cl.	Lab.	Pr.	Cr.	No.	Course	Cl.	Lab.	Pr.	Cr.
1-01	Chemistry	3	3	6	4	11-02	Chemistry	3	3	6	4	11-03	Chemistry	3	3	6	4
2-01	Drawing	0	6	3	3	12-02	Drawing	0	6	3	3	12-03	Drawing	0	6	3	3
4-01	Math.	5	0	7	4	14-02	Math.	5	0	7	4	14-03	Math.	5	0	10	5
5-01	Physics	3	0	6	3	15-02	Physics	3	0	6	3	15-03	Physics	3	0	6	3
0-01	English	3	0	6	3	30-02	English	3	0	6	3	30-03	English	3	0	6	3
6-10	Phys. Tr.	0	2	0	0	16-11	Phys. Tr.	0	2	0	0	16-12	Phys. Tr.	0	2	0	0
		<u>14</u>	<u>11</u>	<u>28</u>	<u>17</u>			<u>14</u>	<u>11</u>	<u>28</u>	<u>17</u>			<u>14</u>	<u>11</u>	<u>31</u>	<u>18</u>

SECOND YEAR

TERM 4*					TERM 5					TERM 6				
1-04 Chemistry	3	3	6	2	20-11 Economics	3	0	6	3	20-12 Economics	3	0	6	3
5-04 Physics	3	0	6	1½	14-05 Diff. Calc.	4	0	8	4	14-06 Int. Calc.	4	0	8	4
4-04 Math.	5	0	10	2½	15-05 Physics	3	3	6	4	15-06 Physics	3	3	6	4
3-05 Am. Hist.	6	0	12	3	3-01 Elec. Eng.	3	0	6	3	3-02 Elec. Eng.	3	0	6	3
					1-10 Surveying	4	3	5	4	2-20 App. Mech.	4	0	8	4
	17	3	34	9		17	6	31	18		17	3	34	18

THIRD YEAR

TERM 7*					TERM 8					TERM 9				
2-05 Am. Govt.	4	0	8	2	3-03 El. Implement	4	0	5	3	14-07 Diff. Eq.	4	0	5	3
2-30 Pwr. Pl. Eq.	5	0	10	2½	2-21 App. Mech.	3	0	6	3	2-22 Sgth. of Matls.	4	0	8	4
2-04 Mach. Draw.	0	9	3	2	2-32 Ht. Eng. Ther.	4	0	8	4	1-20 Hydraulics	3	0	6	3
2-50 Prod. Proc.	5	0	10	2½	5-10 Ind. Mgt. I	3	0	6	3	5-11 Ind. Mgt. II	2	0	4	2
					2-40 Materials	2	0	4	2	2-33 Ht. Eng.	3	0	6	3
					26-05 Social Probs.	3	0	6	3	22-06 Munic. Gov't				
										or				
										23-06 Rec. Eur. His.	3	0	6	3
	14	9	31	9		19	0	35	18		19	0	35	18

FOURTH YEAR

TERM 10*					TERM 11					TERM 12				
2-37 Htg. & Air					1-21 Hydraulics	3	0	6	3	2-24 Adv. Mech.	3	0	6	3
Cond.	6	0	12	3	2-23 Sgth. of Matls.	3	0	6	3	2-25 Aerodynam.	3	0	6	3
0-17 Literature	6	0	12	3	2-34 Ht. Eng.	3	0	6	3	2-35 Ht. Eng.	4	0	8	4
2-08 Cur. Pol. Iss.					2-60 Mech. Lab.	0	3	3	2	2-61 Mech. Lab.	0	3	6	3
or					2-10 Mechanism	0	6	6	4	5-14 Meth. Eng.	1	2	4	2
3-08 Cont. Orient	6	0	12	3	24-07 Philosophy					24-08 Philosophy				
					or					or				
					25-07 Psychology	3	0	6	3	25-08 Psychology	3	0	6	3
	18	0	36	9		12	9	33	18		14	5	36	18

FIFTH YEAR

TERM 13*					TERM 14					TERM 15				
2-41 Metallog.	4	4	10	3	2-26 Eng. Dyn.	3	0	6	3	2-38 Pwr. Pl. Eng.	4	0	8	4
2-66 Mech. Lab.	3	6	9	3	2-11 Mach. Des.	0	6	3	3	2-12 Mach. Des.	0	9	6	5
0-18 Literature	6	0	12	3	2-62 Mech. Lab.	0	4	5	3	2-63 Mech. Lab.	0	4	5	3
					1-46 Structs.	3	0	6	3	1-47 Structs.	3	0	6	3
					1-36 Ht. Eng.	3	0	6	3	30-07 Eff. Spkg.	3	0	6	3
					50-01 Prof. Dvlpmnt.	3	0	6	3					
	13	10	31	9		12	10	32	18		10	13	31	18

*Summer term — 5 weeks.

**All physically qualified male freshmen may elect R.O.T.C. if they so desire. Students accepted for the R.O.T.C. will not be required to take Physical Training in Terms 1, 2, 3, and will be permitted to substitute advanced R.O.T.C. courses for certain upperclass academic work as approved by the Dean up to a maximum of 12 credits.

Electrical Engineering

Electrical engineering is still comparatively new; it was barely two generations ago that Thomas Edison built the first central electric power station in New York City, and it was only a generation ago that the radio made its first appearance. In consequence, we find this branch of engineering more closely related to research in pure science than are the older branches of civil and mechanical engineering. Moreover, the tremendous developments of the past decade in theoretical physics have been largely in areas closely related to electrical engineering as exemplified by Radar, Amplydine and similar tools used in World War II, so that today greater opportunities for intellectual pioneering appear to exist in this field of engineering than in other branches of the profession.

The electrical industry and the field of electrical engineering are usually divided into two main branches, one having to do with electrical power and the other, communications, with the field of electronics overlapping both. The power group deals principally with large equipment and apparatus employing heavy currents; the communications group handles smaller, more delicate equipment employing small or even minute currents. Electrical engineering thus embraces the generation, transmission, and distribution of electricity for light and power purposes, the operation of all types of electrical equipment including telephone, telegraph, industrial electronics, radio, television and ultra-high frequency as well as lamps, motors, and household appliances. In addition, the field of illuminating engineering, having to do with the problems of proper light intensities, has in recent years assumed increasing importance.

Since electricity is without material embodiment and can be treated only by mathematical reasoning, the electrical engineer is frequently required to go into higher mathematics seldom used in other fields. It is also absolutely essential that the electrical engineer who hopes to make a success of his work be able to grasp readily and absorb effectively the meaning and content of the many scientific papers having to do with research in this field. For these reasons, the program of study in electrical engineering includes more work in the pure sciences of mathematics and physics than do the other courses, as well as a solid grounding in engineering fundamentals. This is followed by a thorough study of electrical theory and its applications in the power, high voltage, and electronics fields.

The profession of electrical engineering affords a wide diversification of employment opportunities. If one is research-minded, opportunity to develop one's talents may be found in one of the great laboratories; if one is more interested in plant problems, opportunity can be found in the manufacturing or operating organizations; and if one is sales-minded, he may find a career as a sales engineer.

Curriculum in Electrical Engineering

FIRST YEAR**

TERM 1					TERM 2					TERM 3							
No.	Course	Cl.	Lab.	Pr. Cr.	No.	Course	Cl.	Lab.	Pr. Cr.	No.	Course	Cl.	Lab.	Pr. Cr.			
01	Chemistry	3	3	6	4	11-02	Chemistry	3	3	6	4	11-03	Chemistry	3	3	6	4
01	Drawing	0	6	3	3	12-02	Drawing	0	6	3	3	12-03	Drawing	0	6	3	3
01	Math.	5	0	7	4	14-02	Math.	5	0	7	4	14-03	Math.	5	0	10	5
01	Physics	3	0	6	3	15-02	Physics	3	0	6	3	15-03	Physics	3	0	6	3
01	English	3	0	6	3	30-02	English	3	0	6	3	30-03	English	3	0	6	3
10	Phys. Tr.	0	2	0	0	16-11	Phys. Tr.	0	2	0	0	16-12	Phys. Tr.	0	2	0	0
<hr/>					<hr/>					<hr/>							
14 11 28 17					14 11 28 17					14 11 31 18							

SECOND YEAR

TERM 4*					TERM 5					TERM 6				
04 Chemistry	3	3	6	2	20-11 Economics	3	0	6	3	20-12 Economics	3	0	6	3
04 Physics	3	0	6	1½	14-05 Diff. Calc.	4	0	8	4	14-06 Int. Calc.	4	0	8	4
04 Math.	5	0	10	2½	15-05 Physics	3	3	6	4	15-06 Physics	3	3	6	4
05 Am. Hist.	6	0	12	3	3-01 Elec. Eng.	3	0	6	3	3-02 Elec. Eng.	3	0	6	3
					30-17 Literature	3	0	6	3	2-20 App. Mech.	4	0	8	4
<hr/>					<hr/>					<hr/>				
17 3 34 9					16 3 32 17					17 3 34 18				

THIRD YEAR

TERM 7*					TERM 8					TERM 9				
05 Am. Govt.	4	0	8	2	14-07 Diff. Eq.	4	0	5	3	3-13 Elec. Meas.	3	0	6	3
30 Pwr. Pl. Eq.	5	0	10	2½	2-21 Appl. Mech.	3	0	6	3	2-22 Str. Mat.	4	0	8	4
04 Mach. Draw.	0	9	3	2	2-39 Heat Eng.	3	0	6	3	1-20 Hydraulics	3	0	6	3
50 Prod. Proc.	5	0	10	2½	3-10 D.C. Mach.	5	0	7	4	3-11 Adv. A.C. The.	3	0	6	3
					2-40 Materials	2	0	4	2	3-12 E.E.Lab.D.C.	1	3	2	2
					22-08 Cur. Pol. Iss.					22-06 Munic. Govt.				
					or					or				
					23-08 Cont. Orient	3	0	6	3	23-06 Rec. Eur. Hist.	3	0	6	3
<hr/>					<hr/>					<hr/>				
14 9 31 9					20 0 34 18					17 3 34 18				

FOURTH YEAR

TERM 10*					TERM 11					TERM 12				
07 Efec. Spkg.	6	0	12	3	2-23 Str. Mat.	3	0	6	3	3-19 El. Fld. Theo.	3	0	6	3
36 E. Eng. Math.	6	0	12	3	3-15 Polyphase					3-20 Transformers				
10 Surveying	8	6	10	4	A. C. Circ.	3	0	6	3	Theory	3	0	6	3
					3-16 Electronics	3	0	6	3	3-21 Electronics	3	0	6	3
										3-22 A. C. Test				
					3-17 Elec. Meas.	4	0	5	3	Lab.	1	3	5	3
					3-18 E. Meas. Lab.	0	3	6	3	3-23 Electron. Lab.	1	3	5	3
					24-07 Philosophy					24-08 Philosophy				
					or					or				
					25-07 Psychology	3	0	6	3	25-08 Psychology	3	0	6	3
<hr/>					<hr/>					<hr/>				
20 6 34 10					16 3 35 18					14 6 34 18				

FIFTH YEAR

TERM 13*					TERM 14					TERM 15				
-24 Electronic L.	2	6	10	3	3-26 Syn. Mach.	3	0	6	3	3-30 Ind. Mach.	3	0	6	3
-25 Adv. Meas. L.	0	6	12	3	3-27 H. F. Eng.	3	0	6	3	3-31 H. F. Eng.	3	0	6	3
-18 Literature	6	0	12	3	3-28 Trans. Lines & Ntwrk.	3	0	6	3	3-32 Filters	3	0	6	3
										3-33 H. Freq. Lab.	1	3	5	3
					3-29 Ad. F'ld Th.	3	0	6	3	3-34 Adv. E. E. Lab.	1	3	5	3
					3-35 Ind. El. Lab.	1	3	4	3	26-05 Soc. Probs.	3	0	6	3
					50-01 Prof. Dvlpmt.	3	0	6	3					
	8	12	34	9		16	3	34	18		14	6	34	18

Summer term — 5 weeks.

All physically qualified male freshmen may elect R.O.T.C. if they so desire. Students accepted for the R.O.T.C. will not be required to take Physical Training in Terms 1, 2, 3, and will be permitted to substitute advanced R.O.T.C. courses for certain upperclass academic work as approved by the Dean up to a maximum of 12 credits.

Chemical Engineering

The field of chemical engineering is relatively new. It has grown out of the discoveries in the chemical laboratories which have served as a foundation for a great many new industries whose production processes involve chemical as well as physical changes. Petroleum refining, coal carbonization, plastics, manufacture of nylon and cellophane, and hundreds of other industries require men and women trained in chemistry as well as in engineering. Many older industries such as foods, textiles, paints and varnishes, and leather are also employing chemical engineers.

The chemical engineer has been defined as a "professional man experienced in the design, construction, and operation of plants in which materials undergo chemical and physical change." It is the duty of the chemical engineer to reduce the costs, increase production, and improve the quality of the products in the industry.

The chemical engineer must possess a working knowledge of the fundamental sciences and must understand and know how to work with people. In addition it is necessary that the chemical engineer recognize clearly the "correct appraisal of values and costs" and possess the ability to apply the knowledge possessed to the development and operation of chemical processes and plants.

In addition to the fundamental courses in chemistry, mathematics, and physics required of all engineering students, a considerable amount of time is devoted to more advanced work in chemistry as a foundation for the study of chemical technology. Instruction in the elements of mechanical and electrical engineering also gives the student a fairly broad engineering background upon which to base his study of chemical engineering unit operations. Courses of a more liberal nature are included in the curriculum in order that the student may broaden his educational background. Since the field of chemical engineering is so varied, the curriculum has been designed to give the students a broad training rather than a specialized training in one specific industry. It is believed that this training will enable the students readily to acclimate themselves to whatever industry they may choose to enter.

Because of the complex nature of many chemical processes and because of the difficulty of translating laboratory results into full-scale plant operations, there has developed in many chemical plants the so-called semi-works or pilot plant. Here new processes developed by the chemists in the research laboratory are put to the test of actual plant conditions on a small scale. And it is here that the young chemical engineers often find themselves upon graduation. If they are able to understand the chemist on the one side and the plant operator on the other, and if they are technically competent as well, they will soon find opportunities for advancement either in one of the technical branches of the industry, such as design, development, research, and production, or in the sales and management fields in which chemical engineering is essential.

Curriculum in Chemical Engineering

FIRST YEAR**

TERM 1						TERM 2						TERM 3					
No.	Course	Cl.	Lab.	Pr.	Cr.	No.	Course	Cl.	Lab.	Pr.	Cr.	No.	Course	Cl.	Lab.	Pr.	Cr.
1-01	Chemistry	3	3	6	4	11-02	Chemistry	3	3	6	4	11-03	Chemistry	3	3	6	4
2-01	Drawing	0	6	3	3	12-02	Drawing	0	6	3	3	12-03	Drawing	0	6	3	3
4-01	Math.	5	0	7	4	14-02	Math.	5	0	7	4	14-03	Math.	5	0	10	5
5-01	Physics	3	0	6	3	15-02	Physics	3	0	6	3	15-03	Physics	3	0	6	3
0-01	English	3	0	6	3	30-02	English	3	0	6	3	30-03	English	3	0	6	3
6-10	Phys. Tr.	0	2	0	0	16-11	Phys. Tr.	0	2	0	0	16-12	Phys. Tr.	0	2	0	0
		<hr/>						<hr/>						<hr/>			
		14	11	28	17			14	11	28	17			14	11	31	18

SECOND YEAR

TERM 4*					TERM 5					TERM 6				
1-04 Chem.	3	3	6	2	20-11 Economics	3	0	6	3	20-12 Economics	3	0	6	3
5-04 Physics	3	0	6	1½	14-05 Diff. Calc.	4	0	8	4	14-06 Int. Calc.	4	0	8	4
4-04 Math.	5	0	10	2½	15-05 Physics	3	3	6	4	15-06 Physics	3	3	6	4
3-05 Am. Hist.	6	0	12	3	11-11 Qual. Anal.	2	3	4	3	2-20 Appl. Mech.	4	0	8	4
					11-10 Quant. Anal.	2	3	4	3	11-12 Quant. Anal.	2	3	4	3
					4-41 Chem.Eng.Lit.	1	0	2	1					
	17	3	34	9		15	9	30	18		16	6	32	18

THIRD YEAR

TERM 7*					TERM 8					TERM 9				
4-01 Flow Fluids	5	3	16	4	2-21 Appl. Mech.	3	0	6	3	2-22 Sgth. Mat.	4	0	8	4
2-05 Am. Govt.	4	0	8	2	2-32A Thermo.	4	0	8	4	11-30 Phys. Chem.	4	3	8	5
1-09 Inorg. Chem.	4	6	8	3	14-07 Diff. Equa.	3	0	6	3	4-02 Ch. E. Calc.	3	0	6	3
					11-14 Quan. Anal.	3	6	6	5	4-24 Cost Est.	3	0	6	3
					26-05 Soc. Prob.	3	0	6	3	22-06 Mun. Govt.				
										or				
										23-06 Rec. Eur. His.	3	0	6	3

FOURTH YEAR

TERM 10*					TERM 11					TERM 12						
0-17 Literature	6	0	12	3	4-11 Unit. Oper.	4	4	10	6	4-12 Unit. Oper.	4	4	10	6		
4-22 Ch. E. Econ.	6	0	12	3	11-20 Org. Chem.	3	6	6	5	11-21 Org. Chem.	3	6	6	5		
2-08 Cur. Pol. Iss.	6	0	12	3	11-33 Phys. Chem.	4	2	6	4	11-34 Phys. Chem.	4	2	6	4		
or					24-07 Philosophy					24-08 Philosophy						
3-08 Cont. Orient					or					or						
				25-07 Psychology	3	0	6	3	25-08 Psychology	3	0	6	3			
				18	0	36	9	14	12	28	18	14	12	28	18	

FIFTH YEAR

TERM 13*					TERM 14					TERM 15				
4-13 Unit. Oper.	3	6	9	3	4-31 Ch. Pr. Dev.	0	6	6	4	4-21 Chem. Plts.	4	0	8	4
0-07 Eff. Spkg.	6	0	12	3	3-04 Elec. Eng.	3	3	6	4	4-32 Ch. E. Des.	0	6	12	6
0-18 Literature	6	0	12	3	4-03 Ch. E. Ther.	4	0	8	4	4-23 Eng. Mats.	3	0	6	3
					11-22 Org. Chem.	3	0	6	3	3-05 Elec. Eng.	3	0	6	3
					50-01 Prof. Dev.	3	0	6	3	11-25 Organ. Lab.	0	6	0	2
	15	6	33	9		13	9	32	18		10	12	32	18

*Summer term — 5 weeks.

*All physically qualified male freshmen may elect R.O.T.C. if they so desire. Students accepted for the R.O.T.C. will not be required to take Physical Training in Terms 1, 2, 3, and will be permitted to substitute advanced R.O.T.C. courses for certain upperclass academic work as approved by the Dean up to a maximum of 12 credits.

Industrial Engineering

It has become increasingly evident that the success of a business or industrial organization, large or small, is dependent upon the skillful direction, supervision, and co-ordination of the various parts of the enterprise. The competent performance of these functions requires a constant supply of industrial managers well trained in the intelligent utilization of men, materials, machines, and money. Industrial engineering is the profession which supplies such individuals who, by aptitude and preparation, are able to apply engineering and scientific principles to the varied problems in the field of production management and effect solutions in the best interests of capital, labor, and consumer.

About sixty years ago, Frederick W. Taylor undertook to apply to the problems of industrial management what we now call "the scientific method" or "the engineering approach." He reasoned that it was management's business to know what constituted a proper day's work and that the way to get the facts was through research and experiment on a scientific basis. He defined "scientific management" not as any device or scheme or gadget, but as a new outlook — a new viewpoint based upon a solid foundation of fact. The methods employed by Taylor and by those who came after him have undergone some modification, but the concept of scientific management which he formulated has gained wider and wider recognition from both employers and employees.

This growing recognition of the value of a scientific approach to the problems of industrial management early created a demand for men and women trained in engineering and science, who possessed a knowledge of business as well, to assume positions of administrative responsibility in industry. To meet this demand, courses were established in many engineering colleges to provide a thorough training in engineering fundamentals together with a specialized training in business administration, which would prepare the students for managerial responsibilities in technical industries. These curricula are variously entitled industrial engineering, administrative engineering or engineering administration, but all are designed to lead ultimately to positions of administrative or executive responsibility, rather than to positions which involve highly specialized engineering responsibility.

The curriculum in industrial engineering, then, provides a course of study which is essentially the same as that for mechanical engineering in the first three years. In the last two years, however, advanced engineering courses are replaced by courses in business management.

Upon graduation, the young industrial engineer may find his way into such factory staff departments as Methods Engineering, Production Planning and Control, Wage Administration, Quality Control, or Time Study. If he prefers, he may select work in Cost Accounting or Statistical Analysis; then again he may incline towards sales engineering activity and serve in the "field" as a Sales and Service representative.

More and more there is opportunity for the experienced Industrial Engineer to serve industry in a consulting capacity. Upon becoming especially skilled in his profession, he is called in by industry for assistance in the installation and maintenance of sound management principles, and in the reorganization of enterprises which have failed.

Curriculum in Industrial Engineering

FIRST YEAR**

TERM 1					TERM 2					TERM 3							
No.	Course	Cl.	Lab.	Pr. Cr.	No.	Course	Cl.	Lab.	Pr. Cr.	No.	Course	Cl.	Lab.	Pr. Cr.			
01	Chemistry	3	3	6	4	11-02	Chemistry	3	3	6	4	11-03	Chemistry	3	3	6	4
01	Drawing	0	6	3	3	12-02	Drawing	0	6	3	3	12-03	Drawing	0	6	3	3
01	Math.	5	0	7	4	14-02	Math.	5	0	7	4	14-03	Math.	5	0	10	5
01	Physics	3	0	6	3	15-02	Physics	3	0	6	3	15-03	Physics	3	0	6	3
01	English	3	0	6	3	30-02	English	3	0	6	3	30-03	English	3	0	6	3
10	Phys. Tr.	0	2	0	0	16-11	Phys. Tr.	0	2	0	0	16-12	Phys. Tr.	0	2	0	0
<hr/>					<hr/>					<hr/>							
14 11 28 17					14 11 28 17					14 11 31 18							

SECOND YEAR

TERM 4*					TERM 5					TERM 6				
04 Chemistry	3	3	6	2	20-11 Economics	3	0	6	3	20-12 Economics	3	0	6	3
04 Physics	3	0	6	1½	14-05 Diff. Calc.	4	0	8	4	14-06 Int. Calc.	4	0	8	4
04 Math.	5	0	10	2½	15-05 Physics	3	3	6	4	15-06 Physics	3	3	6	4
05 Am. Hist.	6	0	12	3	3-01 Elec. Eng.	3	0	6	3	3-02 Elec. Eng.	3	0	6	3
					1-10 Surveying	4	3	5	4	2-20 App. Mech.	4	0	8	4
<hr/>					<hr/>					<hr/>				
17 3 34 9					17 6 31 18					17 3 34 18				

THIRD YEAR

TERM 7*					TERM 8					TERM 9				
-05 Am. Govt.	4	0	8	2	3-03 El. Implement	2	2	5	3	14-07 Diff. Equa.	4	0	5	3
-30 Pwr. Pl. Eq.	5	0	10	2½	2-21 App. Mech.	3	0	6	3	2-22 Sgth. of Mtls.	4	0	8	4
-04 Mach. Draw.	0	9	3	2	2-32 Thermo.	4	0	8	4	1-20 Hydraulics	3	0	6	3
-50 Prod. Proc.	5	0	10	2½	5-10 Ind. Mgt.	3	0	6	3	5-11 Ind. Mgt.	2	0	4	2
					2-40 Materials	2	0	4	2	2-33 Ht. Power	3	0	6	3
					26-05 Soc. Probs.	3	0	6	3	22-06 Munic. Govt.				
										or				
										23-06 Rec. Eur. Hist.	3	0	6	3

FOURTH YEAR

TERM 10*					TERM 11					TERM 12				
-37 Htg. & Air. C.	6	0	12	3	1-21 Hydraulics	3	0	6	3	2-61 Mech. Lab.	0	3	6	3
-17 Literature	6	0	12	3	2-23 Sgth. of Mtls.	3	0	6	3	5-15 Work Sim-				
-08 Cur. Pol. Iss.					2-34 Ht. Eng.	3	0	6	3	plification	1	2	4	2
or					2-60 Mech. Lab.	0	3	3	2	42-10 Personnel	3	0	6	3
-08 Cont. Orient	6	0	12	3	2-10 Mechanism	0	6	6	4	41-07 Th. of Accts.	4	0	8	4
					24-07 Philosophy					20-22 Ind. Statis. I	2	2	5	3
					or					24-08 Philosophy				
					25-07 Psychology	3	0	6	3	or				
										25-08 Psychology	3	0	6	3
	18	0	36	9		12	9	33	18		13	7	35	18
FTH YEAR														
TERM 13*					TERM 14					TERM 15				
-66 Mech. Lab.	3	6	9	3	2-11 Mach. Des.	0	6	3	3	5-18 Qual. Control	3	0	6	3
-03 Contracts &					41-07 Elmts. of Cost					41-09 Elmts. of Cost				
Agency	6	0	12	3	Acctg.	2	2	5	3	Acctg.	2	2	5	3
-18 Literature	6	0	12	3	20-23 Ind. Statis. II	2	2	5	3	42-17 Prob. in Pers'l	3	0	6	3
					5-17 Prod. Pl. Con.	3	0	6	3	43-08 Sales Eng.	3	0	6	3
					5-16 Metd. Eng.	2	2	5	3	44-14 Ind. Fin.	3	0	6	3
					50-01 Prof. Dvlpmt.	3	0	6	3	30-07 Effec. Spkg.	3	0	6	3
	15	6	33	9		12	12	30	18		17	2	35	18

Summer term — 5 weeks.

All physically qualified male freshmen may elect R.O.T.C. if they so desire. Students accepted for the R.O.T.C. will not be required to take Physical Training in Terms 1, 2, 3, and will be permitted to substitute advanced R.O.T.C. courses for certain upperclass academic work as approved by the Dean up to a maximum of 12 credits.

NORTHEASTERN UNIVERSITY

SYNOPSES OF

COURSES
OF INSTRUCTION

in

Liberal Arts

Business Administration

Engineering

1952-1953



BOSTON 15, MASSACHUSETTS
JANUARY, 1952

Synopses of Courses of Instruction

On the pages which follow are given the synopses of courses offered in the several curricula of the Day Colleges. Although not all courses are offered every year, all will be offered during the normal period of each student's curriculum. The term "preparation" indicates a course that must be taken before undertaking the advanced course to which it applies.

A credit hour equals three clock hours of work: ordinarily one hour of class and two hours of preparation a week for a term of 10 weeks. Credit hours can be converted into standard semester hours by multiplying by 10/16, the ratio of the number of weeks in the term to the usual number of weeks in the semester.

The University reserves the right to withdraw, modify, or add to the courses offered or to change the order or content of courses in any curriculum.

Civil Engineering

1-10 *Surveying* — This first course in surveying is divided into two portions: classroom instruction and surveying field work.

Basic surveying principles are stressed in the lecture portion of this course covering the following topics: taping, the compass, the level, differential leveling, profile leveling, the transit, closed traverse, stadia, traverse calculations and plotting of survey data.

The surveying field work portion of this course covers such topics as taping, differential leveling, running closed traverse, and the location of physical details from the closed traverse by angle and distance or by stadia. Prep. 14-03; 4 Class Hrs.; 3 Lab. Hrs.; 4 Credit Hrs.

1-11 *Surveying* — Like course 1-10, this course in surveying is divided into two portions, classroom instruction, and the drafting room.

Simple, compound and reverse horizontal curves, both from the standpoint of a railroad curve and of a circular arc, are studied. Also, included in the classroom instruction are vertical curves and earthwork solutions.

In the drafting room, data collected in the field portion of the course 1-10 are calculated as a closed traverse, plotted, and traced as a finished plan. Prep. 1-10; 4 Class Hrs.; 3 Lab. Hrs.; 4 Credit Hrs.

1-12 *Surveying* — This course is a continuation of course 1-11 and it is divided into classroom instruction and field surveying.

In the classroom the following are studied: spiral easement curves; a review of spherical trigonometry; observations on the sun for latitude, time and azimuth; and the basic principles of photogrammetry and geodesy.

The field work consists of a random traverse being run, from which the physical details are located. A map is prepared, using collected data; a location line determined, and then the location line is staked out, with a profile of the location line being run. Prep. 1-11; 4 Class Hrs.; 3 Lab. Hrs.; 4 Credit Hrs.

1-13 *Surveying* — This course is a continuation of the laboratory portion of course 1-12 and the following surveying problems are performed: precise and

Coast and Geodetic leveling; cross sections; earthworks calculations; mass diagram solution; plane table problems; observations on the sun for latitude, time, and azimuth; observation on Polaris for azimuth; and basic problems of photogrammetry including differential parallax measurements. Prep. 1-12; 18 Lab. Hrs.; 3 Credit Hrs.

1-20 *Hydraulics* — A basic course in hydraulics dealing with the laws of hydrostatics and hydrokinetics.

In hydrostatics the following topics are studied: pressure gauges; differential manometers; pressure intensities; total pressures; location of center of pressure (horizontally and vertically); total pressures on curved and inclined surfaces; hoop tension and end tension; simple dams; and flotation problems.

While in hydrokinetics, Bernoulli's theorem; the Venturi meter, orifices; short tubes; pipe lines; and open channel flow are studied. Prep. 2-21; 3 Class Hrs.; 3 Credit Hrs.

1-21 *Hydraulics* — This course is a continuation of course 1-20, where the following subjects are studied: equivalent pipes; the Hardy Cross method of analysis; weirs; dimensional analysis; model analysis by Froude's number and by Reynold's number; flow of fluids through closed conduits; the hydraulic jump; and the drawdown and backwater curves. Prep. 1-20; 3 Class Hrs.; 3 Credit Hrs.

1-24 *Sanitary Engineering* — This is a general course in water supply engineering where the following items are studied: forecasting the future population; the quality and quantity of water; rainfall; runoff; the collection and storage of ground water and surface water supplies; slow sand and rapid sand filters; treatment of waters for the removal of hardness, iron, and other impurities; disinfection of waters; and the distribution system. Prep. 1-21; 3 Class Hrs.; 3 Credit Hrs.

1-25 *Sanitary Engineering* — This is a companion course to 1-24. It deals with the collection and disposal of sewage and storm water, including the following items: the quantity of sewage and storm water; sewerage systems; the collection of data necessary for design and construction of collection systems; and a discussion of the modern methods of sewage treatment and the operation of these treatment plants.

The laboratory portion of this course is designed to familiarize the student with the proper methods of collecting, storing, and transporting water and sewage samples; and the basic principles of water and sewage analysis for both chemical and bacterial properties. Prep. 1-24; 3 Class Hrs.; 3 Lab. Hrs.; 4 Credit Hrs.

1-30 *Transportation* — This course consists of a discussion of traffic engineering, administration, surveys and plans of modern highways. The economics of highway rates of grade and general layout features, such as vertical curves, horizontal curves, superelevation, traffic control, accidents and general highway safety, are discussed.

Roadway foundations, grading and excavating equipment as well as highway drainage problems are also considered.

A study is made of soil tests and classifications. The elementary principles of soil mechanics as they are applied to highway and airport design and construction are considered.

The manufacture and testing of bituminous products as well as the construction of low cost road types (earth and gravel) and methods of soil stabilization are included. Prep. 1-12; 4 Class Hrs.; 3 Credit Hrs.

1-31 *Transportation* — A course which is a continuation of 1-30 and includes a detailed discussion of the design and construction of the higher cost types of roadways such as penetrated macadam, Portland cement concrete and asphaltic concrete pavements. A brief discussion of airport design and layout concludes the course.

The application of the latest research developments is considered throughout all phases of the material as given in both this course and 1-30. Prep. 1-30; 2 Class Hrs.; 2 Credit Hrs.

1-40 *Structural Analysis* — This, the first of a series of four courses in structural analysis, is devoted to a review and expansion of algebraic and graphical methods of determining reactions, shears, bending moments and stresses developed by loads acting upon all forms of planar and statically determinate beams and frame structures. Classes are conducted on the combined lecture and recitation basis. Prep. 2-22; 3 Class Hrs.; 3 Credit Hrs.

1-41 *Structural Analysis* — A continuation of 1-40, covering a discussion of roof loads encountered in practice and the determination of design stresses for a typical roof truss. Consideration is given to the various types of girder, simple truss and subdivided truss, highway and railway bridges embracing the treatment of dead load stresses developed in such structures. A complete study of influence lines is undertaken, together with their function in determining the shears, bending moments and stresses produced by moving load systems, both distributed and concentrated, with attention to their dynamic or impact effect. Upon conclusion of these studies a discussion of design stresses is included. Prep. 1-40; 4 Class Hrs.; 4 Credit Hrs.

1-42 *Structural Analysis* — A continuation of 1-41, covering the slope and deflection of beams and girders due to bending, by the method of work, the moment-area process, and the method of elastic weights. The deflection of statically determinate framed structures is studied by the method of work and by the Williot-Mohr process. Prep. 1-41; 3 Class Hrs.; 3 Credit Hrs.

1-43 *Structural Analysis* — Continuation of 1-42, embracing the analysis of continuous beams, simple statically indeterminate trusses and frameworks (without and with side sway) by the methods of least work, slope-deflection and moment distribution.

A study is made of the shears, moments and stresses developed in tall building frames by the various approximate methods of treatment. Prep. 1-42; 4 Class Hrs.; 4 Credit Hrs.

1-46 *Structures* — This course, designed for mechanical engineering students, comprises a study of loads and the analysis of ordinary building frames and trusses encountered in this field. The complete determination of design stresses for a typical roof truss is carried out. Assumptions for making approximate solutions of mill building bents are considered. The use of influence lines for stress analysis under moving loads is studied. The application of influence lines

to simple and overhanging beams is stressed. Maximum shears and moments due to moving, concentrated, and distributed loads are considered, as well as the absolute maximum moment in a beam. Prep. 2-23; 3 Class Hrs.; 3 Credit Hrs.

1-47 Structures — This course covers the basic principles and assumptions of structural design for a clearer understanding of design problems encountered in mechanical engineering. It consists of the theory and practice of designing connections for various structural elements, using rivets and welds. It also deals with the design of tension and compression members, giving consideration to direct and flexural stresses. A complete study of a plate girder for a building is made. Prep. 1-46; 3 Class Hrs.; 3 Credit Hrs.

1-49 Concrete Testing Laboratory — This laboratory course covers the testing (by ASTM and AASHTO Standards) of Portland Cement and aggregates as used in making concrete.

The physical testing of the Portland Cement includes normal consistency, tensile strength, compressive strength, time of set, soundness (autoclave expansion), fineness and specific gravity.

The tests on the aggregate (fine and coarse) consist of specific gravity, absorption, sieve analysis, surface moisture, mortar making properties, organic impurities, bulking, unit weight and abrasion loss (Los Angeles).

Concrete mix variables such as the water-cement ratio law, effect of varying percentages of sand as well as varying maximum size aggregate on the cement factor with given w/c is studied by means of laboratory exercises. Strength characteristics are determined by compression and flexural testing.

Demonstration tests are conducted by the students to study the strength developing characteristics of the cement types. The effect of temperature and various methods of curing is undertaken as a laboratory exercise as well as a study of air-entraining cement and normal cement.

The latest developments in the field of cement technology and testing are discussed throughout the course. Prep. 2-40; 1 Class Hr.; 4 Lab. Hrs.; 3 Credit Hrs.

1-50 Concrete — The fundamental principles involved in the theory of reinforced concrete behavior are thoroughly reviewed and investigated, and the transformed area method of analysis and design is developed. This is followed by the application of this method to the analysis and design of elementary members such as rectangular beams, tee beams and beams reinforced in compression. Shear, bond and anchorage are also treated. In addition, a discussion of specifications and current practice is included. Prep. 2-23, 1-49; 3 Class Hrs.; 3 Credit Hrs.

1-51 Concrete — A continuation of 1-50, beginning with a study of the effects of diagonal tension and the design of vertical and inclined stirrups. The analysis and design of axially loaded columns on the basis of elastic behavior, followed by consideration of the influence of shrinkage and plastic flow, leading to Joint Committee column design practice. This followed by the analysis of members subjected to combined bending and axial effects. The interpretation of the Joint Committee Report on Recommended Practice and Standard Specifications for Concrete and Reinforced Concrete as affecting such construction is carried on throughout this course. Prep. 1-50; 3 Class Hrs.; 3 Credit Hrs.

1-54 *Design of Structures* — This first course consists of lectures and problem work in the theory and practice of designing connections for various structural elements using rivets and welding. Connections with concentric and eccentric loadings are considered. Some discussion is also given to timber connectors. Prep. 2-22; 2 Class Hrs.; 4 Lab. Hrs.; 2 Credit Hrs.

1-55 *Design of Structures* — This course, a continuation of 1-54, considers the design of moment connections for fixed ended beams. Following this, the work consists principally of the design of the individual members in a structural framework such as tension members, compression members, and flexural members. In the design of these members the effect of combined loadings is carefully considered. Shop drawings are made for the members as designed. Prep. 2-22, 1-54; 3 Class Hrs.; 6 Lab. Hrs.; 3 Credit Hrs.

1-56 *Design of Structures* — This course, the third one in the Design series, treats the complete design and drawing of a plate girder for a building or bridge. The tabular or office procedure method of design of reinforced concrete beams is developed. The design of reinforced concrete footings, both isolated and combined, are included. The design of continuous beams, both steel and concrete, concludes the course. Prep. 1-55; 9 Lab. Hrs.; 3 Credit Hrs.

1-57 *Foundation Engineering* — By means of lectures and assigned readings the following topics are considered: types of piles, pile driving equipment, pile loading capacity, marine borers, various types of caissons, cofferdams, methods of underpinning and ground water control in foundation construction. Consideration is given to dredging operations.

The latest developments in the field of soil mechanics as related to the above topics are treated. 2 Class Hrs.; 2 Credit Hrs.

1-58 *Engineering Geology* — A study of the various methods of subsurface exploration such as borings and seismic methods is undertaken. The principal object of the material that follows these opening topics is to present the engineering application of the various topics that are included in 13-01 (General Geology). Emphasis is placed upon such topics as physical properties of the various rock types, study of subsurface waters, streams, dam sites and reservoirs, soil erosion and earth movements. Prep. 13-01; 4 Class Hrs.; 4 Credit Hrs.

1-60 *Construction Costs* — This course begins with an introduction to the organization of the construction industry and companion matters. There follows a discussion of approximate and detailed estimate of construction cost methods, both direct and indirect. Types of construction agreements by contract, day labor, etc. are examined, as well as bidding procedure. Some consideration is given to cost keeping, reports, debt retirement and depreciation as affecting costs. 3 Class Hrs.; 3 Credit Hrs.

Mechanical Engineering

2-10 *Mechanism* — Mathematical and graphical solutions of problems include angular and linear velocities, vector analysis, velocity analysis, linkages, design of cams, transmission of motion by bodies in pure rolling contact, gears and gear tooth design, wheels in trains including gear trains and epicyclic gear com-

binations, drives by belt, ropes, and chains, as well as various miscellaneous motions. Prep. 2-21; 6 Lab. Hrs.; 4 Credit Hrs.

2-11 Machine Design — Practice is given the student in the application of theoretical principles previously studied so that he becomes familiar with the many practical details which must be considered in design work. Consideration is given to the application and design of such machine elements as keys, pins, cotter, press, shrink and friction joints, weldments, chain, and brakes. Prep. 2-24; 6 Lab. Hrs.; 3 Credit Hrs.

2-12 Machine Design — The theoretical and practical application of mechanics and materials to design of many machine elements including lubrication, leaf springs, helical springs, shafting, couplings, crankshafts, flywheels, spur helical and worm gearing. Dynamic loading is also used in analysis of many of the computations. Prep. 2-11; 9 Lab. Hrs.; 5 Credit Hrs.

2-20 Applied Mechanics (Statics) — The subjects treated are colinear, parallel concurrent and non-concurrent force systems in a plane and in space, the determination of the resultant of such systems by both algebraic and graphical means, special emphasis being placed on the string polygon method for coplanar force systems and the forces required to produce equilibrium in such systems. In addition, problems are considered involving static friction on plane surfaces. Prep. 15-02; 4 Class Hrs.; 4 Credit Hrs.

2-21 Applied Mechanics (Kinetics) — The subjects considered are first moments as applied to areas and solids, and to the determination of centroids of areas and solids; second moments and their application to the determination of moments of inertia of plane and solid figures; radius of gyration, polar moment of inertia, product of inertia, principal axes, principal moments, uniform motion, uniformly accelerated motion, variable accelerated motion, harmonic motion, rotation, plane motion, force, mass and acceleration of bodies and center of percussion. Prep. 14-06, 2-20; 3 Class Hrs.; 3 Credit Hrs.

2-22 Strength of Materials — This course covers the definition and discussion of unit stress and strain, the physical properties of materials, the stress-strain, diagram, axially loaded members, resilience, stresses in thin hollow cylinders, riveted and welded connections, torsion of circular shafts, simple beam theory including shear and bending moment diagrams, bending and shearing stresses and beam design. Prep. 2-21; 4 Class Hrs.; 4 Credit Hrs.

2-23 Strength of Materials — The differential equation of the elastic curve is derived and applied to varied loadings of beams by double integration and by moment-area methods. The moment-area method is further applied to indeterminate beams and to the derivation of the Theorem of Three Moments. Other topics covered are eccentric loading of compression members, combined axial and bending loads and column action in compression members. Prep. 2-22; 3 Class Hrs.; 3 Credit Hrs.

2-24 Advanced Mechanics — The analysis of stress at a point by analytical and graphic (Mohr's Circles) methods with emphasis on plane stress, and existing theories of failure are investigated. The results are applied to special problems such as thick hollow cylinders, shafting under combined bending and torsion, curved bars in bending, non-symmetrical bending, non-circular torsion and allied

subjects leading to the applications of mechanics in machine design and other fields. Prep. 2-23; 3 Class Hrs.; 3 Credit Hrs.

2-25 *Aerodynamics* — Preliminary topics discussed are dimensional analysis, linear momentum theory, and two dimensional flow of an ideal fluid. Superposition of flow patterns are treated as preliminary to the Kutta-Joukowski lift theorem for flow past a rotating cylinder. Extending the theory to three dimensions, the topics considered are Prandtl's vortex theory, von Karman's vortex sheet and the elementary boundary layer theory. Prep. 1-21; 3 Class Hrs.; 3 Credit Hrs.

2-26 *Engine Dynamics* — A review of the principles of momentum and impulse, both linear and angular, and of impact is made. Application of the momentum principles is made to the gyroscope and to Coriolis's law. The latter part of the course is then devoted to the discussion of vibrations, both free and forced, damped and undamped, particularly with respect to problems involving a single degree of freedom. Prep. 2-21, 14-07; 3 Class Hrs.; 3 Credit Hrs.

2-30 *Heat Engineering (Power Plant Equipment)* — This course is largely descriptive, and includes most of the equipment used in modern steam power plants. Particular attention is given to comparing various types of boilers, ash and coal handling systems, engines and valve gears, governing devices, turbines, condensers, feed water heaters and pumps. Gas turbines and other prime movers are compared to steam power plants. 5 Class Hrs.; 2½ Credit Hrs.

2-31 *Heat Engineering (Thermodynamics)* — In this introductory course in the fundamentals of thermodynamics the following subjects are discussed: general theory of heat and matter; first and second laws of thermodynamics; equations of state; fundamental equations of thermodynamics; laws of perfect gases; properties of vapors including development and use of tables and charts; thermodynamic processes of gases and saturated and superheated vapors; and the general equations of the flow of fluids. Prep. 14-06, 15-06; 3 Class Hrs.; 3 Credit Hrs.

2-32 *Heat Engineering (Thermodynamics)* — In this course in the fundamentals of thermodynamics, the following subjects are discussed: general theory of heat and matter, first and second laws of thermodynamics, entropy, equations of state, laws of perfect gases, properties of liquids and vapors including development and use of tables and charts, thermodynamic processes of materials and some discussion of the general equations of thermodynamics. Prep. 14-06, 15-06; 4 Class Hrs.; 4 Credit Hrs.

2-33 *Heat Engineering* — The principles of thermodynamics are applied to the following phases of heat engineering: theory of flow of gases and vapors through nozzles and orifices with and without friction; the theory of vapor engines with emphasis on the Rankine, reheat, regenerative and binary vapor cycles, the efficiency and power calculations for actual steam boilers and engines. Prep. 2-30, 2-32; 3 Class Hrs.; 3 Credit Hrs.

2-34 *Heat Engineering (Refrigeration)* — The discussion of compression of perfect gases leads to an examination of the air refrigeration cycle. Vapor compression cycles are examined and each component studied in some detail. Enough

heat transfer is given to discuss condenser and evaporator design. Low temperature cycles (two stage with flash intercooler and cascade), absorption refrigeration, and dry ice production are considered. Prep. 2-32; 3 Class Hrs.; 3 Credit Hrs.

2-35 Heat Engineering (Internal Combustion Engines)—A study is made of the internal combustion engine, including an analysis of gasoline and Diesel engine construction, cycles, combustion theory, air-fuel mixtures, carburation, detonation, valve timing, and fuels. The effect of these items on power output, efficiency and design is discussed. Although the course is mainly theoretical, consideration is given to data compiled from various research sources in the field. Prep. 2-33; 4 Class Hrs.; 4 Credit Hrs.

2-36 Heat Engineering (Turbines)—A study is made of the various types of steam turbines, the dynamic action of jets on moving blades, and velocity diagrams. Other topics include the calculation of efficiencies, including the influence of friction, a study of the turbine losses, lubrication, governing mechanisms, and other constructional details. The balance of the course includes problems in the design of a turbine and the principles and performance of gas turbines. Prep. 2-33; 3 Class Hrs.; 3 Credit Hrs.

2-37 Heating and Air Conditioning—A study is first made of the heat losses from buildings. This is followed by a detailed study of current methods of heating such buildings, including warm-air, steam and hot water systems. Auxiliaries such as boilers, stokers, oil burners, and automatic controls are considered in detail. The latter part of the course deals with central and district heating and the principles and application of air conditioning. Prep. 2-32; 6 Class Hrs.; 3 Credit Hrs.

2-38 Power Plant Engineering—Topics and problems taken from engineering practice are discussed to give the student an understanding of the principles and methods of analyzing power plant problems, efficiencies and costs of operation of different types of plants such as steam, hydro-electric and Diesel engines to determine the type best suited for the conditions and location involved. Prep. 2-34, 2-35; 4 Class Hrs.; 4 Credit Hrs.

2-39 Heat Engineering—The fundamentals of thermodynamics are discussed as follows: general theory of heat and matter; first and second laws of thermodynamics; equations of state; laws of perfect gases; properties of vapors including development and use of charts and tables; thermodynamic processes of gases; saturated and superheated vapors. These fundamentals of thermodynamics will be applied to engine cycles and power plant cycles through the use of problems. Prep. 2-30; 3 Class Hrs.; 3 Credit Hrs.

2-39A Heat Engineering—The first and second laws of thermodynamics and the methods for calculation of heat and work are developed. Properties of vapors are treated and the use of charts is explained. These principles are applied to engines, compressors, refrigeration cycles, and other power equipment of interest to the chemical engineer. Some description of the various types of equipment is included. Prep. 15-06; 4 Class Hrs.; 4 Credit Hrs.

2-40 Materials—A study of the physical properties, composition, and to some extent the methods of production of the ferrous and non-ferrous metals and their

alloys, plastics, timber, lime, cement, and concrete. Emphasis is placed on the selection of materials for actual service conditions. Prep. 2-40; 2 Class Hrs.; 3 Credit Hrs.

2-41 *Metallography* — A study is made of the relation between the crystalline structures and the physical properties, the theory of crystallization, and some of the equilibrium diagrams of the ferrous and non-ferrous metals. Metallic specimens of known composition are polished, etched, examined under microscopes and by the metallograph and comparisons made with their physical properties. The effect of heat treatment on crystalline structure is also considered. Prep. 2-50; 4 Class Hrs.; 4 Lab. Hrs.; 3 Credit Hrs.

2-50 *Production Processes* — The techniques, processes and machines used in the manufacture and production of articles are considered. The processes covered include heat treatment, hot and cold working, welding, die casting, plastics and foundry practice. The metallurgical principles involved are correlated with these processes. The construction and operation of the air-furnace, electric arc furnace, and the cupola are discussed. 5 Class Hrs.; 2½ Credit Hrs.

2-60 *Mechanical Engineering Lab.* — A preliminary series of tests is made upon various types of apparatus used in steam power plants in preparation for more complete tests to be performed during the following course, 2-61. Tests include calibration of gages, plain slide valve setting, steam calorimeters, flow of steam through orifices, weir calibration, steam injector, friction of drives, fuel calorimeter, and flow of water in pipes. Prep. 2-33; 3 Lab. Hrs.; 2 Credit Hrs.

2-61 *Mechanical Engineering Lab.* — Complete tests are made on the following types of power plant equipment: horizontal type of steam engine, steam-driven air compressor, Curtis steam turbine, gasoline engine, triplex power pump, two stage centrifugal pump, rotary power pump, Pelton water wheel, and air blower.

Complete reports are made describing the machine tested, method of test, results, and discussion, all in accordance with the ASME Power Test Codes. Prep. 2-34, 2-60; 3 Lab. Hrs.; 3 Credit Hrs.

2-62 *Mechanical Engineering Lab.* — Tests included in the course are Warren steam pump, unit steam heater, Carrier air conditioner, Diesel engine, steam heating boiler and hot air heater. Additional tests are conducted on materials of engineering, including tension tests on hot and cold rolled steel, torsion test, impact test and analysis of the true-stress diagram. A complete report is required of each test. Prep. 2-35, 2-23; 4 Lab. Hrs.; 3 Credit Hrs.

2-63 *Mechanical Engineering Lab.* — Tests dealing with materials of engineering include a transverse bending test on a steel beam, hardness tests on metals and compression tests on metals and woods. Tests on molding sands are made also. In addition, lubricating oils, six stage centrifugal pump, Trane air conditioner, and CFR test engine. A report is written on each test. Prep. 2-62; 4 Lab. Hrs.; 3 Credit Hrs.

2-64 *Testing Materials Laboratory* — A detailed study is made of standard methods of inspecting and testing metals and woods of importance in structural engineering. Tests are made to determine tensile properties, hardness, transverse strength, torsional resistance, compressive strength, column action, impact re-

sistance and bending properties. Several non-standard tests are included to demonstrate research methods applied to specific questions. Prep. 2-23, 2-40; 1 Class Hr.; 4 Lab. Hrs.; 3 Credit Hrs.

2-66 Mechanical Engineering Lab. — This course consists of a study of the various methods of processing metals, and includes the study of machine tools, small tools, metal working costs, and a study of the most effective way of removing metal.

The course also includes a study of the heat treatment of tools, and the use of jigs and fixtures in the operation of modern manufacturing processes. Prep. 2-50; 6 Lab. Hrs.; 3 Credit Hrs.

Electrical Engineering

3-01 Electrical Engineering — This course is designed to give a sound background in the field of electrical engineering. It gives consideration to fundamental definitions of current, voltage and resistance and includes a study of direct current circuits, electrical measuring instruments, network theorems, electromagnetic induction and magnetic circuits. The material covered is supplemented by basic engineering problems, which should be of interest to the student majoring in Civil, Industrial, Mechanical, or Electrical Engineering. Prep. 15-03, 15-04; 3 Class Hrs.; 3 Credit Hrs.

3-02 Electrical Engineering — A continuation of 3-01. It is designed to show the engineering student how d-c theory is expanded to comply with alternating current circuit conditions. The general topics covered are instantaneous voltage, current and power; effective current and voltage; average and reactive power; complex algebra and its a-c application, and sinusoidal single-phase circuit analysis. Problems basic to the general engineering field are assigned throughout the course. Prep. 3-01; 3 Class Hrs.; 3 Credit Hrs.

3-03 Electrical Implementation — The purpose of this course is to familiarize the non-electrical engineering student with various electrical devices. Ever-expanding use of these devices in all branches of engineering has indicated this need. Three-phase electric circuits and magnetic-circuit theory are covered; and these principles, along with those covered in 3-01 and 3-02, are used in considering transformers, induction and synchronous motors, and alternators. Basic electronic theory is then presented, for the purpose of acquainting the student with automatic control systems. Prep. 3-01, 3-02; 4 Class Hrs.; 3 Credit Hrs.

3-04 Electrical Engineering — This course is designed to meet the needs of the chemical engineering students in the application of electrical engineering to industrial processes. Basic d-c and a-c circuit theory is studied as well as the elementary theory of d-c and a-c machines. Involved also is a study of the characteristics and associated circuits of industrial type electronic devices, including the high-vacuum diode and triode, the thyatron and ignitron tubes, and photo-electric tubes.

A laboratory course accompanies the lecture course, and the experiments include work on d-c and a-c circuits, resonant conditions, diode and triode

characteristics, rectification and filtering, amplifiers, and the characteristics and use of photo-tubes. Prep. 15-03, 15-04; 3 Class Hrs.; 3 Lab. Hrs.; 4 Credit Hrs.

3-05 *Electrical Engineering* — This course is a continuation of 3-04 and develops the application to industrial processes of those devices studied in the previous course. Included for consideration are the operating characteristics of d-c motors and generators, the ignitron and thyatron polyphase rectifiers, induction and dielectric heating, as well as the control and regulation of motor speed and generator voltage. A laboratory demonstration period accompanies the lectures. Prep. 3-04; 3 Class Hrs.; 3 Credit Hrs.

3-10 *D. C. Machinery* — This course deals with the principles of d-c machinery, including armature windings, commutation, armature reaction, losses, ratings, excitation methods, and operating characteristics of shunt, series, and compound generators. The principles of operation of d-c motors are also investigated with emphasis on shunt, series, and compound characteristics, stray power, efficiencies, ratings and applications. Attention is also given to auxiliary protective and control devices. Prep. 3-01, 3-02; 5 Class Hrs.; 4 Credit Hrs.

3-11 *Advanced A. C. Theory* — In this course attention is given to those single-phase a-c principles not covered in previous courses. The subject matter includes a study of a-c transients in linear circuits, non-sinusoidal wave form analysis, effective resistance and reactance, and elementary filter circuits. Prep. 3-02; 3 Class Hrs.; 3 Credit Hrs.

3-12 *Electrical Engineering Laboratory D. C.* — This laboratory course is designed to aid the student in developing his ability to conduct tests of an engineering nature as well as to write and submit engineering reports. The experiments follow closely the material of 3-10. Included are experiments on generator (1) armature and field resistance measurements, (2) shunt and compound loading characteristics study and (3) parallel operation methods. Load tests on shunt and series motors are included along with three methods of approximating true load conditions, namely, the stray power method, Kapp opposition method and the retardation method of division of losses. Prep. 3-10; 1 Class Hr.; 3 Lab. Hrs.; 2 Credit Hrs.

3-13 *Electrical Measurements* — One of the functions of this course is to acquaint the student with the theory of precision measure as applied to electrical measurements in particular. Some of the subjects covered are theory of measurements, directly and indirectly measured quantities, recording of observations, rules of significant figures, classification of error, law of error, characteristics of error, and law of average deviation.

In this course, parts and theory of operation of resistance devices, galvanometers, and indicating instruments are discussed. This is followed by a detailed discussion of the methods of measuring various electrical quantities: resistance, resistivity, conductance; d-c electromotive force, current, power and energy.

The principles taught in this course are immediately applied in all experiments run in the measurements laboratory and so far as necessary in the machine testing laboratory. Prep. 3-01, 3-02, 14-07; 3 Class Hrs.; 3 Credit Hrs.

3-15 *Polyphase A. C. Circuits* — This course deals with polyphase circuits. Voltage, current, and power relations in polyphase circuits are studied in detail

with emphasis on three-phase circuits. Both balanced and unbalanced conditions are considered. Particular attention is given to the methods of measuring three-phase power and to the application of symmetrical phase components to the solution of unbalanced polyphase circuits. Prep. 3-11; 3 Class Hrs.; 3 Credit Hrs.

3-16 *Electronics* — This is an introductory course in electron tubes and is concerned with the motion of electrons in electric and magnetic fields, thermionic emission, static and dynamic vacuum tube characteristics, equivalent circuit methods, and graphical solutions. The object of the course is to give the student a thorough knowledge of the basic construction and operation of thermionic vacuum tubes and to demonstrate the mathematical and graphical procedures used in solving circuit problems. Prep. 3-36; 3 Class Hrs.; 3 Credit Hrs.

3-17 *Electrical Measurements* — This course covers the operating principles and constructional details of certain commercial a-c bridges having application to the measurement of resistance, capacitance, self and mutual inductance, and vacuum tube constants. Other measuring devices studied include the a-c induction watt-hourmeter, attenuators, and vacuum-tube voltmeters. The electronic theory and application of the thyatron tube, and the electromechanical principles involved in loudspeakers and telephone receivers, are also covered. Prep. 3-13; 4 Class Hrs.; 3 Credit Hrs.

3-18 *Electrical Measurements Laboratory* — This course emphasizes the theory of 3-13 and 3-17. Measurement of all the general types of impedances as well as very low resistance is included. The standardization, test and calibration of the more basic instruments gives the student practical training in the use of precision measure. Experiments on networks familiarize the student with the more common laboratory equipment. Prep. 3-17, 3-13; 3 Lab. Hrs.; 3 Credit Hrs.

3-19 *Electrical Field Theory* — This course is designed to meet the requirement that the student who graduates with a bachelor's degree in electrical engineering have information concerning the fundamentals underlying the techniques of static and dynamic electric and magnetic field theory. The subject matter is taken up in the following order: electrostatics; vector analysis, unit vectors, vector algebra, gradient; divergence, curl, polar co-ordinates; theorems related to fields, curl, scalar potential, solenoidal fields, and vector potential; electrostatic fields, conductors, charged sphere, inverse square law, electrostatic energy; dielectrics, polarization; electric current, electromotive force; magnetic fields, magnetic force, magnetic flux, emf by motion, convention signs; fields and wire, magnetic flux linkages; examples and interpretation, boundary surface fields within conductor, induction; Maxwell's field equations; wave equations. Prep. 3-36; 3 Class Hrs.; 3 Credit Hrs.

3-20 *Transformer Theory* — A detailed study of the construction, theory and characteristics of transformers, with emphasis given to their use in power circuits. Both single-phase and polyphase applications are considered and special types such as the autotransformer and instrument transformers are included. Prep. 3-15; 3 Class Hrs.; 3 Credit Hrs.

3-21 *Electronics* — This course is a detailed study of the design, calculation and operation of vacuum tube circuits. Among the topics considered are voltage amplifiers, cathode followers, inverse-feedback circuits, and class A power

amplifiers. Problems are solved involving practical circuits and the student acquires practice in both equivalent circuit and graphical methods of solution. Prep. 3-16; 3 Class Hrs.; 3 Credit Hrs.

3-22 *A. C. Test Laboratory* — This is a laboratory course designed to present tests on alternating current circuits and transformers at power frequencies. It includes tests on series and parallel R, L, C circuits, resonance, power measurements by the two-wattmeter and polyphase-wattmeter methods, load and opposition tests on transformers, polyphase transformer connections, and the constant-current transformer. Prep. 3-15, 3-20; 1 Class Hr.; 3 Lab. Hrs.; 3 Credit Hrs.

3-23 *Electronic Laboratory* — The experiments performed in this course are based upon material given in 3-16. They include the determination of static and dynamic vacuum tube characteristics, tube constants, and the performance of tubes in amplifiers and similar circuits. Emphasis is placed upon checking experimental results with those obtained by calculation. Prep. 3-16, 3-21; 1 Class Hr.; 3 Lab. Hrs.; 3 Credit Hrs.

3-24 *Electronic Laboratory* — The experiments in this course deal with measurements at radio frequencies. The types of apparatus experimented upon include a typical superheterodyne receiver, detectors, class C amplifier, reactance modulator, discriminator, coaxial line, and matching networks. The student acquires practice and experience in using test equipment such as primary and secondary frequency standards, cathode-ray oscilloscopes, vacuum-tube voltmeters, frequency meters and wave analyzers. Prep. 3-21, 3-23; 2 Class Hrs.; 6 Lab. Hrs.; 3 Credit Hrs.

3-25 *Advanced Measurements Laboratory* — A continuation of 3-18. The experiments give the student an opportunity to study and operate the more advanced and refined high frequency bridges, receivers, oscillators, vacuum tube voltmeters and audio frequency wave analyzers. Also included are studies on filters, artificial lines, audio transformers and vacuum tube voltmeters, phototubes and wavemeters. Prep. 3-13, 3-17, 3-18; 6 Lab. Hrs.; 3 Credit Hrs.

3-26 *Synchronous Machinery* — A course dealing with the construction, general theory, and operating characteristics of synchronous machines, with emphasis on their use as synchronous generators and synchronous motors. Operating problems encountered when these machines are connected in parallel are given careful consideration. Prep. 3-20; 3 Class Hrs.; 3 Credit Hrs.

3-27 *High Frequency Engineering* — This course is based on material covered in Electronics 3-16 and 3-21 continuing into the field of radio engineering, taking up the following topics: design and analysis of r-f tank circuits, power oscillators, class C and B r-f power amplifiers, modulators, neutralizing circuits, and velocity modulated tubes and circuits. Prep. 3-16, 3-21, 3-19; 3 Class Hrs.; 3 Credit Hrs.

3-28 *Transmission Lines and Networks* — This course deals with the fundamental principles of transmission lines and networks in the steady state. Reflection phenomena are considered with various terminations including open and short-circuit conditions. Included in the discussion are a consideration of insertion loss and iterative and image impedance connections. Equivalent T and Pi networks are considered in detail. Prep. 3-19, 3-11; 3 Class Hrs.; 3 Credit Hrs.

3-29 *Advanced Field Theory* — This course is based on the material covered in Electric Field Theory 3-19, continuing with plane waves, electric fields, magnetic fields, power and Poynting's vector; reflection, radiation, magnetic vector potential and electrodynamic potential. Further material may be subdivided into three general classifications: antennas, propagation and wave guides. The subdivision of these are antennas, low and high-frequency, arrays, propagation through rectangular and circular guides, resonance phenomena in wave guides, application of resonant elements, practical utilization of wave guides. Prep. 3-36, 3-19; 3 Class Hrs.; 3 Credit Hrs.

3-30 *Induction Machinery* — This course is a continuation of 3-26. It deals with single-phase and polyphase induction motors and induction generators but includes a study of series and repulsion motors.

The method of symmetrical phase components is applied to the study of the effect of unbalanced condition on the operation of induction motors. Prep. 3-26; 3 Class Hrs.; 3 Credit Hrs.

3-31 *High-Frequency Engineering* — Continuation of High-Frequency Engineering 3-27, covering the following topics: UHF generators, magnetron and special tubes, trigger and clamping circuits, multivibrators and application, magnetostriction and piezo-electric oscillators and design, and analysis of voltage and current stabilization. Prep. 3-27; 3 Class Hrs.; 3 Credit Hrs.

3-32 *Filters* — This course considers in detail the four principal types of filters (low-pass, high-pass, band-pass and band-elimination) in their constant-k and m-derived forms. Design and performance are considered including the design of composite filters properly terminated. Lattice structures are considered together with their transformations to T or bridged-T sections. Prep. 3-28; 3 Class Hrs.; 3 Credit Hrs.

3-33 *High Frequency Laboratory* — The experiments included in this course cover the pulse circuits, UHF and microwave components, commonly employed in pulse-type equipment such as television, pulse-modulated communication systems, and radar. Typical of the devices and circuits studied are klystrons, wave guides, parabolic reflectors, resonant cavities, resonant-line oscillators, pulse-forming and delay lines and the phantastron-delay circuit. Prep. 14-07, 3-19, 3-29, 3-27; 1 Class Hr.; 3 Lab. Hrs.; 3 Credit Hrs.

3-34 *Advanced Electrical Engineering Laboratory* — In this laboratory course, tests are performed on several types of alternating current motors and generators. The tests are varied from year to year. Typical experiments are a load test on a polyphase induction motor, load test on a brush-shifting induction motor, V-curve and efficiency test on a synchronous motor, determination of the voltage regulation of a synchronous generator by the American Standards Association Method and finding the efficiency of a synchronous generator from no-load tests. Prep. 3-26, 3-30; 1 Class Hr.; 3 Lab. Hrs.; 3 Credit Hrs.

3-35 *Industrial Electronics Laboratory* — This laboratory is designed to show the application of electronic control and regulator circuits to electrical machinery and to industrial processes. A study is made of the characteristics of those electronic tubes used in industrial applications such as the thyatron and ignitron

tubes. Experiments include the electronic regulation of the speed of a d-c motor and the voltage of a d-c generator, the three-phase ignitron rectifier and double three-phase ignitron rectifier, induction and dielectric heating, automatic synchronization of three-phase, a-c sources, and the precipitron. Prep. 3-17, 3-16, 3-21; 1 Class Hr.; 3 Lab. Hrs.; 3 Credit Hrs.

3-36 *Electrical Engineering Mathematics* — This course continues the study of ordinary linear differential equations started in 14-07, and offers the basic principles of partial differential equations. Special emphasis is placed upon the forms of the solutions of Laplace's equation and the wave equation in various co-ordinate systems. Also included is an introduction to operational calculus with application made to the solution of representative electrical circuits and mechanical systems. Prep. 14-07; 6 Class Hrs.; 3 Credit Hrs.

Chemical Engineering

4-01 *Flow of Fluids* — The effects of system dimensions, operating variables and physical properties of the fluids on the power consumption for flow of both incompressible and compressible fluids are studied. Methods for the determination of optimum economic conditions are presented. Flow meters are evaluated and brief reference is made to non-Newtonian flow, two phase flow and fluidized systems. Laboratory work is included in the course. Prep. 15-02; 5 Class Hrs.; 3 Lab. Hrs.; 4 Credit Hrs.

4-02 *Chemical Engineering Calculations* — This is a problem course in which the tools of stoichiometry, such as common basis, energy and material balances, are applied to typical industrial calculations. Problems are assigned dealing with the combustion of fuels, dilutions metering, drying, flame temperature, and recycling processes. Considerable attention is devoted to the use of ratios and the common basis method of relating various systems, as these procedures are of particular value to the chemical engineer. Prep. 11-12, 11-14; 3 Class Hrs.; 3 Credit Hrs.

4-03 *Chemical Engineering Thermodynamics* — Fundamental concepts, development of the first two laws, and both expansion and compression are reviewed. Equations are developed expressing the thermodynamic functions in terms of system variables. These equations are utilized to develop charts and tables of the thermodynamic functions required for estimation of heat and work effects. The energy and state changes associated with steady and unsteady state, non-cyclic flow processes are considered in detail. Liquid-vapor equilibrium relationships are developed for ideal and non-ideal systems. The effects of the fundamental variables on reaction yields the third law, and the relationship between free energy and spontaneity of reaction, are studied with emphasis on industrial application. Prep. 2-32, 14-7; 4 Class Hrs.; 4 Credit Hrs.

4-11 *Unit Operations* — This course consists of a study of the mechanical operations peculiar to the chemical industry. The unit operations studied are flow of heat, evaporation and air conditioning. Experiments are performed on small-scale plant equipment that has been specially designed or selected for the purpose. Detailed reports are required. Prep. 4-01, 4-02; 4 Class Hrs.; 4 Lab. Hrs.; 6 Credit Hrs.

4-12 Unit Operations — This course is a continuation of 4-11. The unit operations studied are drying, distillation, gas absorption, extraction and crystallization. Experiments are performed in the laboratory on the unit operations studied. Prep. 4-01, 4-02; 4 Class Hrs.; 4 Lab. Hrs.; 6 Credit Hrs.

4-13 Unit Operations — This course is a continuation of 4-12. The unit operations studied are filtration, mixing, crushing and grinding, size separation and conveying. Laboratory experiments are performed. Prep. 4-01, 4-02; 3 Class Hrs.; 6 Lab. Hrs.; 3 Credit Hrs.

4-21 Chemical Plants — The object of this course is to present to the student a cross section of modern chemical and process industries. The presentation is through the use of flow sheets with division into the unit operations and unit processes stressed. The chemistry involved, the equipment used, the energy requirements, and the economics of the processes are presented.

The basic inorganic and organic chemical industries are studied intensively and the similarities to other industries are considered.

Plant inspection trips serve to give practicality to the classroom discussion. Prep. 11-20; 4 Class Hrs.; 3 Credit Hrs.

4-22 Chemical Engineering Economics — The fundamentals of economics and statistics previously acquired by the student are specifically applied to raw materials, markets, labor, power, fuel, water, transportation and similar economic factors as related to the chemical industry. Laws relating to waste disposal, nuisance and patents are discussed. Prep. 20-21; 6 Class Hrs.; 3 Credit Hrs.

4-23 Engineering Materials — A study of the properties of materials which chemical engineers utilize in their work. The effect of composition, heat treatment and mechanical work upon the physical properties of metals and their alloys is emphasized. Other materials are studied in a similar manner. Prep. 11-14; 3 Class Hrs.; 3 Credit Hrs.

4-24 Cost Estimation — Application of current information to the estimation of the cost of new plants and the cost of operation of new processes. An introduction to accounting techniques and the analysis of financial statements precedes the discussion of cost finding systems. The cost of a plant to carry out a specific process is estimated and this is followed by the estimation of the cost of operation of the plant. 3 Class Hrs.; 3 Credit Hrs.

4-31 Chemical Process Development — This course attempts to teach the fundamentals of research by determining the optimum conditions for carrying out some unit process. After a survey of the literature has been made, a research plan is formulated. Variables are noted and their effect on the chemical process determined through laboratory experiments. The writing of reports is an essential feature of the course. Prep. 4-11, 4-12; 6 Lab. Hrs.; 4 Credit Hrs.

4-32 Chemical Engineering Design — The design of equipment of commercial size forms the basis of the course. Design data are taken from the literature when it is available. Other data are obtained by experiment on small-scale industrial equipment in the laboratory. From these data and information acquired in previous courses, the commercial scale equipment is designed. Students qualified by industrial experience are sometimes assigned problems suggested by their

co-operative employer which are worked out under the joint supervision of the plant engineers and the members of the staff. Prep. 4-11, 4-12; 6 Lab. Hrs.; 6 Credit Hrs.

4-41 *Chemical Engineering Literature* — This course introduces the student to sources of information available to chemical engineers. Prep. 11-04; 1 Class Hr.; 1 Credit Hr.

Industrial Engineering

5-10 *Industrial Management* — The administrative and managerial aspects of office and plant operation are given thorough treatment in this course. Emphasis is placed upon such managerial functions as selection of the factory location and factory machines and the maintenance of equipment; plant layout and materials handling; standardization, work simplification and time study; design and inspection of the product; material control and procurement; production planning and control. The course is designed to bring to the student an understanding of the problems facing management today. 3 Class Hrs.; 3 Credit Hrs.

5-11 *Industrial Management* — This course deals with the managerial functions of a business in respect to the labor relations and budgetary control. Subjects covered in detail include the proper selection and training of personnel; labor relations policies — good and bad; wage and salary administration; job evaluation and merit rating; budgetary and cost control. At no time is the student permitted to lose sight of the impact of these managerial activities upon the type of labor-management relations which exist within the plant. Prep. 5-10; 2 Class Hrs.; 2 Credit Hrs.

5-14 *Methods Engineering* — This course is designed for students in Mechanical Engineering to show the proper use of work simplification and time study. The student is instructed in the use of process analysis, operation analysis, man-machine analysis, and micromotion analysis. This is accomplished through lectures, discussions and actual laboratory projects.

Time study is discussed and the student is instructed in its correct use and how this tool can be used as an aid to management. Prep. 5-10; 1 Class Hr.; 2 Lab. Hrs.; 2 Credit Hrs.

5-15 *Work Simplification* — This course presents in detail the functions of the factory staff department commonly known as the Methods Department. These include process analysis through the use of process charts and flow diagrams; the principles and technique of plant layout; operation analysis through the use of operation charts, man-and-machine charts, and micromotion study; the application of the principles of motion economy to all phases of factory operation, clerical and mechanical.

Complete laboratory facilities provide opportunity for the student to apply the subject matter of the course to a typical factory operation set up for this purpose.

This course is designed for students in Industrial Engineering. Prep. 5-10; 1 Class Hr.; 2 Lab. Hrs.; 2 Credit Hrs.

5-16 *Methods Engineering* — A discussion of wage incentive plans paves the way for a thorough understanding of the other topics treated in detail; relation of

time study to motion study and micromotion study; time study technique and procedure; performance rating, development of the concept of "normal," use of personnel, fatigue, delay, and other allowances; the analysis of data; treatment of variables, and the preparation of standard data; setting job and element standards directly from time study versus the use of standard data; industrial relations problems connected with the application of time-studied wage incentive plans. Prep. 5-15; 2 Class Hrs.; 2 Lab. Hrs.; 3 Credit Hrs.

5-17 Production Planning and Control—This course deals with the highly important "operating management" activity of planning and controlling the flow of materials through the shop, and the utilization of the equipment and manpower to best advantage.

Included in the course is the following subject matter: factory organization, factory planning and layout, nomenclature, stores keeping control, development and engineering, planning procedure, scheduling, routing, dispatching, the use of special control charts and boards, forecasting and budgeting. Prep. 5-10; 3 Class Hrs.; 3 Credit Hrs.

5-18 Quality Control—The materials presented in this course are designed to give the student a working knowledge of the theory behind the control chart method and an appreciation of its use. The subject matter includes fundamentals of quality control, theory of control charts, analysis of control chart data, sampling methods, control chart applications, the Poisson distribution, planning for statistical quality control, acceptance sampling, control chart techniques, and industrial applications. Prep. 20-22; 3 Class Hrs.; 3 Credit Hrs.

Biology

10-01 General Zoology—An elementary study of the common invertebrate animal groups, emphasizing their basic structural characteristics; the properties of protoplasm; cell division; physiological division of labor; methods of reproduction including binary fission, sporulation, sexual and metagenesis; selected life histories, economic importance classification and distribution of common representatives. The laboratory work emphasizes the classification and underlying principles of morphology and physiology of the common invertebrates. 2 Class Hrs.; 3 Lab. Hrs.; 3 Credit Hrs.

10-02 General Zoology—Advanced discussions of the vertebrate groups including the physiology and structural characteristics of the reproductive, digestive, circulatory, respiratory, excretory, nervous, muscle and skeletal systems; the consideration of osmotic diffusion; the transportation and utilization of foodstuffs; the functions and elementary histological characteristics of the main varieties of tissues; classification; distribution and ecological relationships; and an elementary exposition of heredity. The laboratory exercises supplement the theoretical studies of morphology and physiology by dissections on the frog and demonstrations of fundamental physiological concepts. Prep. 10-01; 2 Class Hrs.; 3 Lab. Hrs.; 3 Credit Hrs.

10-03 General Botany—An introduction to the science of plant life, including a study of the thallophytes, bryophytes, pteridophytes and spermatophytes

from the point of view of their morphology and life histories of representative examples. Economic importance of these groups is considered. The laboratory periods are devoted to a study of classification, morphology and life histories, aided by use of pertinent models and slides. 2 Class Hrs.; 3 Lab. Hrs.; 3 Credit Hrs.

10-04 *General Botany* — The form and structure of plant cells and plant mitosis; advanced discussion of the morphology and physiology of the rootstem and leaf, together with an account of the factors affecting and effecting the absorption and translocation of foodstuffs; photosynthesis; plant metabolism; the carbon, nitrogen and hydrologic cycles; flower parts and functions; distributional factors and an elementary account of the basic principles of plant ecology. The laboratory periods include demonstrations of physiological processes and a study of the morphology and physiology of plant tissues. Prep. 10-03; 3 Class Hrs.; 3 Lab. Hrs.; 2 Credit Hrs.

10-06 *Biology and Society* — The exposition and analysis of basic biological concepts and their relationship to the structure of human society. The genetic basis of human differences and an analysis of the several environmental factors common to all living organisms in their specific relationships to man. A survey is made of the more significant recent biological principles and the relation they hold to the social and economic welfare of man. 5 Class Hrs.; 2½ Credit Hrs.

10-07 *Experimental Embryology* — The experimental approach to the regeneration of invertebrates and vertebrates. The laboratory work consists of varied experiments related to the field of morphogenesis, utilizing flatworms, frogs, salamanders and other animals. Prep. 10-62; 3 Class Hrs.; 4 Credit Hrs.

10-08 *Experimental Embryology* — The experimental approach to the embryology of invertebrates and vertebrates, emphasizing the biochemical aspects of morphogenesis. Laboratory work will be closely correlated with lecture material. Prep. 10-07; 3 Class Hrs.; 3 Lab. Hrs.; 4 Credit Hrs.

10-11 *General Biology* — An elementary study of the invertebrate animals dealing with the economic and other basic relationships of these animals to man and his environment. The content of the course relates to the study of the cell, mitosis, osmosis, the Protozoa, coelenterates, the worms, the echinoderms, the arthropods and mollusks. The laboratory work includes microscopic examination and the dissection of representatives to reveal the anatomy and relationships of organ systems from one group to the next. 2 Class Hrs.; 3 Lab. Hrs.; 3 Credit Hrs.

10-12 *General Biology* — An elementary introduction to the anatomy and physiology of the chordates including man, emphasizing the form and functions of the digestive, urogenital, circulatory, nervous, respiratory and endocrine systems of the human body. The laboratory is coordinated with the lectures and each system of the frog is dissected concurrently with the lecture discussions. Prep. 10-11; 2 Class Hrs.; 3 Lab. Hrs.; 3 Credit Hrs.

10-13 *General Biology* — A general introductory course in plant morphology and taxonomy with emphasis on the life histories of selected forms together with a consideration of their relationships to other groups, economic importance and modern medical applications of plant knowledge to man. Typical representatives

of the main divisions of the Plant Kingdom, namely, the algae, fungi, mosses, liverworts, ferns and seed-bearing plants are studied. The laboratory involves a study of plant relationships by means of microscopic and macroscopic examination of representative specimens. Prep. 10-12; 2 Class Hrs.; 3 Lab. Hrs.; 3 Credit Hrs.

10-14 General Biology — A course dealing with the physiological processes of the higher plants. The lectures are concerned with the topics of osmosis and diffusion; germination of seeds; functions of roots, including discussion of the ascent of fluids; the morphology and physiological activities of leaves. The laboratory periods supplement the lecture material by including physical experiments designed to illustrate similar functional processes in the plant. Prep. 10-13; 3 Class Hrs.; 3 Lab. Hrs.; 2 Credit Hrs.

10-20 General Bacteriology — The biology of microorganisms emphasizing the bacteria. The course deals with the preparation of media, the methods of sterilization, staining, isolation and identification of pure cultures together with studies on the biochemical activities and effects of physical agents. The laboratory studies are correlated closely with lecture topics and serve to develop in the student the proper technique of handling, observing and working with non-pathogenic microorganisms. Prep. 10-04; 3 Class Hrs.; 3 Lab. Hrs.; 4 Credit Hrs.

10-21 General Bacteriology — An introduction to the bacteriology of water, sewage, air and milk. The course includes a consideration of standards, plate counts and physiological tests for water and milk; a bacterial analysis of air and the treatment and proper disposal of sewage. The laboratory illustrates the types, names, chemical reactions and prevalence of organisms associated with each aspect of the course as revealed from actual samples collected by the student. Prep. 10-20; 3 Class Hrs.; 3 Lab. Hrs.; 4 Credit Hrs.

10-22 Advanced Bacteriology — The course deals with food and dairy bacteriology with emphasis on preservation, spoilage, sanitary inspection and control. The laboratory work deals with the methods of cultivating and studying microorganisms, the demonstration of milk and other foods as a habitat of microorganisms; methods used to determine sanitary quality and sources of contamination.

Permission of the instructor is required for admission to this course. Prep. 10-21; 3 Class Hrs.; 3 Lab. Hrs.; 4 Credit Hrs.

10-23 Advanced Bacteriology — A course designed to acquaint advanced students with the recognition, symptoms, etiology and control of diseases caused by microorganisms such as pneumonia, diphtheria, tuberculosis, leprosy, yellow fever, typhoid, influenza and dysentery. The laboratory demonstrates to the student the precautions necessary in culturing and handling pathogenic organisms, as well as enabling them to identify them on the basis of chemical, physiological and microscopic tests. Prep. 10-22; 3 Class Hrs.; 3 Lab. Hrs.; 4 Credit Hrs.

10-40 Physiology — A course in human physiology including the study of protoplasm and life processes, enzymes, tissues, translocation and utilization of materials; control of tissue activity; the study of the circulatory, respiratory and digestive systems; protein, carbohydrate and fat metabolism. The laboratory

work consists of blood counts, hemoglobin determination, tests for blood, hemolysis, dissections of organs; general and specific tests for proteins, carbohydrates and fats. Prep. 10-55; 3 Class Hrs.; 3 Lab. Hrs.; 4 Credit Hrs.

10-41 *Physiology* — A course in muscle-nerve physiology, physiological properties of nerves, neuro-anatomy of the spinal cord and brain, the physiology of the central and peripheral nervous system, autonomic nervous system; the special senses organs; the excretory, endocrine and reproductive systems. The laboratory consists of practice of the use of apparatus, with experiments on muscle-nerve stimulation, urinalysis and the special senses. Prep. 10-40; 3 Class Hrs.; 3 Lab. Hrs.; 4 Credit Hrs.

10-44 *Nutrition* — A course in the principles of human nutrition, including the chemical changes during digestion, absorption and intermediary metabolism; salt and water metabolism; calorimetry and fuel requirements; vitamins; the nutritive value of food products; the essentials of an adequate diet; the estimation of the calorific value of foods and daily requirements. 4 Class Hrs.; 4 Credit Hrs.

10-45 *Nutrition* — A course including the food requirements of infants and the school child; diet and old age; diet and reproduction; diet therapy in deficiency diseases such as diabetes mellitus; obesity and leanness; diseases of the kidney and urinary tract; diseases of the blood, food poisoning and allergy. The lectures are supplemented by field trips and talks by nutritional specialists. Prep. 10-44; 4 Class Hrs.; 4 Credit Hrs.

10-55 *Comparative Vertebrate Anatomy* — The development and significance of the structural and physiological changes in the chordate groups; homology, analogy, metamerism, cephalization; general features of embryological development of the chordates, particularly that of man; the basic principles of phylogenesis, the geological time scale provide a broad background for the interpretation of the significant morphological changes occurring in the exoskeleton, endoskeleton and muscle systems. *Amphioxus* or *Ammocoetes*, the shark and other forms are studied concurrently in the laboratory affording a comparative treatment. Prep. 10-02; 3 Class Hrs.; 3 Lab. Hrs.; 4 Credit Hrs.

10-56 *Comparative Anatomy* — Continued discussions of the comparative anatomy and general treatment of the embryological and phylogenetic development of the digestive, circulatory, respiratory, excretory, reproductive and nervous systems, tracing the chief evolutionary and ontogenetic sequences of these systems in the main vertebrate classes. The laboratory work consists of a detailed dissection of the systems of the mammal. Prep. 10-55; 3 Class Hrs.; 3 Lab. Hrs.; 4 Credit Hrs.

10-59 *Animal Histology* — A study of the normal microscopic anatomy of the tissues and organ systems of the body including studies of the microscopic anatomy of cells, cell division, cytomorphosis and cell differentiation. A general survey of the characteristics of the main varieties of tissues and detailed studies of the morphology and function of epithelial, connective and vascular tissues. The laboratory periods are used in the study of selected slides and a general introduction to the principles of microscopy. Prep. 10-56; 3 Class Hrs.; 3 Lab. Hrs.; 4 Credit Hrs.

10-60 *Animal Histology* — Further considerations of the microscopic anatomy of animals by a study of characteristics and functions of muscle and nervous tissues with the histology of the lymphatic, vascular, digestive, endocrine, reproductive and sense organs. The laboratory work consists of continued studies of slides illustrating the cellular characteristics of tissues and systems. Prep. 10-59; 3 Class Hrs.; 3 Lab. Hrs.; 4 Credit Hrs.

10-61 *Embryology* — The descriptive embryogeny of *Amphioxus* and the morphological development of the organ systems in the chick, pig and man, principles of embryonic development are discussed with topics on histogenesis, organogenesis and the consideration of factors influencing development. A detailed study is made in the laboratory of organogenesis in the chick by means of serial sections, whole mounts and models representing significant stages of early development. Prep. 10-56; 3 Class Hrs.; 3 Lab. Hrs.; 4 Credit Hrs.

10-62 *Embryology* — The development of man including the subjects of spermatogenesis and oögenesis; the endocrine factors influencing ovulation; the determination of sex; the period of the ovum, blastulation and gastrulation; development and functional significance of the foetal membranes and circulation, and consideration of the embryology of the several systems of the body. The laboratory periods are devoted to a study of organogenesis in the pig with demonstrations of significant stages of human development. Prep. 10-61; 3 Class Hrs.; 3 Lab. Hrs.; 4 Credit Hrs.

10-65 *Genetics* — The study and discussion of variation, the laws of inheritance as found in animals and plants, and their application to human relations, including the observational, experimental, cytological, statistical and developmental approaches. The laboratory includes methods of culturing, handling and experimental crossing of *Drosophila*. Prep. 10-04; 3 Class Hrs.; 3 Lab. Hrs. 4 Credit Hrs.

10-69 *Histological Technique* — The fundamentals of histological technique, by laboratory means, introducing the student to the general methods of tissue preparation for purposes of microscopic study. The preparation of solutions and stains, the microtome and its operation together with specific directions for fixation, clearing, hardening, embedding, section-cutting and staining of tissues. Prep. 10-60; 2 Class Hrs.; 6 Lab. Hrs.; 4 Credit Hrs.

10-70 *Histological Technique* — Practical application of the basic principles of tissue preparation and sectioning with exercises on the preparation of several tissues of the animal body portraying the qualities of selected stains and their combinations. Directions for affixing sections, mounting, labeling are given the student. Prep. 10-69; 2 Class Hrs.; 6 Lab. Hrs.; 4 Credit Hrs.

10-71 *History of Biology* — An historical survey of the development, trends, and theoretical principles of biological thought. The purpose is to present as inclusively as possible, the progressive development of biology, emphasizing the specific contributions that have been made beginning with the philosophers of Greece and Babylonia and Rome, continuing in sequence through the Middle Ages, the Renaissance and the eighteenth, nineteenth and twentieth centuries. 4 Class Hrs.; 4 Credit Hrs.

10-80, 10-81 *Senior Research* — Experimental work in biology under the direction of staff members. Approval of department head necessary. Each course carries 2 to 4 hours credit and extends through a single term.

10-82, 10-83 *Seminar (Biology)* — Discussion of the development, trends, and theoretical principles of biological thought. Approval of department head necessary. 2 Class Hrs.; 1 Credit Hr. (each term).

10-100, 10-101, 10-102, 10-103, 10-104, 10-105, 10-106, 10-107 *Advanced Biology* — The study of biology from one or more of the following aspects: taxonomy, physiology, anatomy, life histories and ecology and includes field or laboratory techniques. 3 Class Hrs.; 3 Credit Hrs.

10-120, 10-121, 10-122, 10-123, 10-124, 10-125, 10-126, 10-127 *Thesis* — Experimental problem. Carried continuously through eight consecutive terms. (To be arranged) Lab. Hrs.; 1-3 Credit Hrs.

10-128, 10-129, 10-130, 10-131, 10-132, 10-133, 10-134, 10-135 *Seminar* — Lectures on special topics and student reports on assigned projects. Eight consecutive one-term courses. 3 Class Hrs.; 2 Credit Hrs.

Chemistry

11-01 *General Chemistry* — Fundamental ideas of matter and energy, states of matter, change of state, symbols, equations, classification of elements, subatomic particles, chemistry of hydrogen, oxygen, water, alkali metals and halogens, and early ideas of atoms and molecules. 3 Class Hrs.; 3 Lab. Hrs.; 4 Credit Hrs.

11-02 *General Chemistry* — Details of atomic structure and electron configurations, natural and artificial radioactivity, nuclear energy, theories of acids and bases, oxidation-reduction reactions and balancing of equations, properties and theory of electrolytic solutions, chemistry of nitrogen and sulfur families of elements. Prep. 11-01; 3 Class Hrs.; 3 Lab. Hrs.; 4 Credit Hrs.

11-03 *General Chemistry* — Reaction rates and chemical equilibrium, equilibrium in electrolytic solutions, elementary consideration of qualitative analysis of cations, properties of colloidal dispersions, metals and general principles of metallurgy, iron and steel manufacture, chemistry of alkaline earth metals, boron family and certain selected metals, principles of electrochemistry. Prep. 11-02; 3 Class Hrs.; 3 Lab. Hrs.; 4 Credit Hrs.

11-04 *General Chemistry* — Study of chemistry of carbon and group properties of silicon, tin and lead, terminology of organic chemistry, open-chain compounds and their derivatives, petroleum and its refining, closed-chain hydrocarbons and derivatives, elements of polymer chemistry including rubber substitutes and plastics. Prep. 11-03; 3 Class Hrs.; 3 Lab. Hrs.; 2 Credit Hrs.

11-09 *Inorganic Chemistry* — The elements, together with the more important classes of compounds, are surveyed from the standpoint of the periodic system. Prep. 11-04; 2 Class Hrs.; 3 Lab. Hrs.; 3 Credit Hrs.

11-10 *Quantitative Analysis* — Theory and practice of volumetric analysis. Use of the analytical balance, calibration of glassware, acidimetry and alkalinity, neutralization and precipitation methods, and the use of indicators. Laboratory work is devoted to analysis of unknowns. Prep. 11-04; 2 Class Hrs., 3 Lab. Hrs.; 3 Credit Hrs.

11-11 *Qualitative Analysis* — Balancing of oxidation-reduction equations, outline of qualitative procedures, ionic theory and ionization constants, meaning of pH, solubility product, hydrolysis and its applications, complex compounds and co-ordination theory, amphoteric behaviors, electrode potential. Laboratory work is devoted to analysis of cations and anions by the semimicro method. Prep. 11-04; 2 Class Hrs.; 3 Lab. Hrs.; 3 Credit Hrs.

11-12 *Quantitative Analysis* — Theory and practice of volumetric analysis continued. Oxidation-reduction methods, potentiometric methods of analysis and colorimetry. Laboratory work is devoted to analysis of unknowns. Prep. 11-10; 2 Class Hrs.; 3 Lab. Hrs.; 3 Credit Hrs.

11-14 *Quantitative Analysis* — Theory and practice of gravimetric analysis. Discussion of rock analysis, iron and steel analysis, nonferrous alloys and electrolytic methods, spectrographic methods, oil analysis, determination of chlorine, sulfur, iron, and phosphorus. Laboratory work is devoted to analysis of unknowns by methods discussed in class. Prep. 11-12; 3 Class Hrs.; 6 Lab. Hrs.; 5 Credit Hrs.

11-15 *Instrumental Analysis* — A course in the use of instrumental and physico-chemical methods in analytical chemistry, including the types of instruments available, the theory of their operation, the limitations, advantages and disadvantages of each instrument. Among those considered are colorimeters, both visual and photoelectric, turbidimeters, nephelometers, spectrophotometers both visual and ultra-violet, the polarizing microscope, refractometer, polarimeter, polarograph, conductivity bridge, potentiometer, and gas analysis apparatus. Laboratory experiments with various instruments. Prep. 11-14; 2 Class Hrs.; 6 Lab. Hrs.; 4 Credit Hrs.

11-17 *Quantitative Analysis* — A course in the theory and practice of volumetric and colorimetric analysis, including the use of the various measuring instruments, the preparation, standardization and applications of neutralizing, redox, and precipitating solutions, the colorimetric determination of pH and of various materials. Laboratory work is devoted to unknown analysis by various procedures discussed in class. Prep. 11-04; 3 Class Hrs.; 3 Lab. Hrs.; 4 Credit Hrs.

11-18 *Quantitative Analysis* — A course in the theory and practice of elementary gravimetric methods, and selected topics in instrumental analysis. In this course, as well as in the preceding one, wherever possible the applications chosen are from the biological field. Laboratory work is devoted to analysis of unknowns by methods discussed in class. Prep. 11-17; 2 Class Hrs.; 3 Lab. Hrs.; 3 Credit Hrs.

11-20 *Organic Chemistry* — Reactions and properties of aliphatic compounds. Discussion of molecules, structural and electronic formulas, preparation and properties of halides, alcohols, aldehydes, ketones, acids, esters, ethers, amines, amides, sulphur compounds. Laboratory work is preparation of certain compounds to illustrate reactions and properties. Prep. 11-14; 3 Class Hrs.; 6 Lab. Hrs.; 5 Credit Hrs.

11-21 *Organic Chemistry* — Reactions and properties of aromatic compounds. Study of halides, nitro-compounds, amines, diazo compounds, sulfonic acids, phenols, ether, alcohols, aldehydes, ketones, acids, esters, condensed aromatic compounds, heterocyclic compounds, carbohydrates. Laboratory preparations of certain selected compounds. Prep. 11-20; 3 Class Hrs.; 6 Lab. Hrs.; 5 Credit Hrs.

11-22 *Organic Chemistry* — Industrial applications of organic chemistry. Survey of industrial solvents — hydrocarbons, halides, alcohols, nitroparaffins, cello-solves, carbitols and others. Study of unit processes, sulfonation, halogenation, nitration, oxidation and reduction, amination, diazotization, hydrolysis. Polymerization theory and practical applications. Industrial dyestuffs. Prep. 11-21; 3 Class Hrs.; 3 Credit Hrs.

11-23 *Qualitative Organic Analysis Laboratory* — Chemical and physical tests used in organic analysis, classification, reactions, preparations of derivatives, analysis of liquid, liquid mixtures, solids, and solid mixtures. Prep. 11-21; 9 Lab. Hrs.; 3 Credit Hrs.

11-24 *Advanced Organic Chemistry* — Electronic interpretations of organic chemical reactions. Alicyclic compounds and the strain theory, free radicals and odd electron molecules, electronic interpretations of organic catalytic reactions such as Perkins, Cannizzaro, Knoevenagel, Fries, Diels-Alder, acetoacetic acid ester. Reformatsky and Arndt-Eistert reactions. Laboratory work is devoted to study of assigned reactions and preparations. Prep. 11-22; 3 Class Hrs.; 6 Lab. Hrs.; 5 Credit Hrs.

11-25 *Qualitative Organic Analysis Laboratory* — Chemical and physical tests used in organic analysis, classification, reactions, preparations of derivatives, analysis of liquid, liquid mixtures, solids and solid mixtures. Prep. 11-21; 6 Lab. Hrs.; 3 Credit Hrs.

11-26 *Organic Chemistry* — Reactions and properties of some aliphatic compounds. Structural formulas, preparations and properties of halides, alcohol, ethers, aldehydes, ketones, acids. Laboratory work is preparation of selected compounds. Prep. 11-04; 3 Class Hrs.; 3 Lab. Hrs.; 4 Credit Hrs.

11-27 *Organic Chemistry* — Reactions and properties of some aliphatic and some aromatic compounds. Aliphatic amines, amides, nitrites. Aromatic acids and amines, diazo compounds, phenols, alcohols. The physiological importance of certain compounds is stressed. Laboratory work is preparation of selected compounds. Prep. 11-26; 3 Class Hrs.; 3 Lab. Hrs.; 4 Credit Hrs.

11-28 *Organic Chemistry* — Reactions and properties of some aromatic compounds. Alcohols, aldehydes, ketones, naphthalene, anthracene, dyes, heterocyclic compounds. Laboratory work is preparation of selected compounds. Prep. 11-27; 3 Class Hrs.; 6 Lab. Hrs.; 5 Credit Hrs.

11-29 *Advanced Organic Preparations* — Assigned preparations which require literature review to determine the best procedure. Prep. 11-22; 9 Lab. Hrs.; 3 Credit Hrs.

11-30 *Physical Chemistry* — Properties of ideal and real gases, kinetic theory of gases, ideal gas law, equations for real gases. Properties of liquids, equations of

state, liquefaction of gases. Crystal structure, X-ray analysis, specific heat of solids, solid-liquid and solid-gas equilibria. Colligative properties of dilute solutions. Preparation and properties of colloidal systems. Laboratory experiments to illustrate lecture topics. Prep. 11-14 and 14-06; 4 Class Hrs.; 3 Lab. Hrs.; 5 Credit Hrs.

11-31 *Physical Chemistry* — First and second laws of thermodynamics, heat capacity of gases, thermochemistry, free energy changes, homogeneous chemical equilibrium, calculations of equilibrium constant, heterogeneous equilibrium, phase rule, condensed system diagrams. Laboratory experiments to illustrate lecture topics. Prep. 11-30; 4 Class Hrs.; 4 Lab. Hrs.; 5 Credit Hrs.

11-32 *Physical Chemistry* — Chemical kinetics, order of reactions, types of reactions, electrical conductance of solutions of electrolytes, degree of ionization, degree of hydrolysis, types of conductance equations, electrolytic solution theory, ionic equilibria, electromotive force, standard potentials, cells, calculation of voltage. Laboratory experiments on reaction velocity, conductance measurements and electromotive force measurements. Prep. 11-31; 4 Class Hrs.; 4 Lab. Hrs.; 5 Credit Hrs.

11-33 *Physical Chemistry* — First and second laws of thermodynamics, heat capacity of gases, thermochemistry, free energy changes, homogeneous chemical equilibrium, calculations of equilibrium constant, heterogeneous equilibrium, phase rule, condensed system diagrams. Laboratory experiments to illustrate lecture topics. Prep. 11-30; 4 Class Hrs.; 2 Lab. Hrs.; 4 Credit Hrs.

11-34 *Physical Chemistry* — Chemical kinetics, order of reactions, types of reactions, electrical conductance of solutions of electrolytes, degree of ionization, degree of hydrolysis, types of conductance equations, electrolytic solution theory, ionic equilibria, electromotive force, standard potentials, cells, calculation of voltage. Laboratory experiments on reaction velocity, conductance measurements and electromotive force measurements. Prep. 11-33; 4 Class Hrs.; 2 Lab. Hrs.; 4 Credit Hrs.

11-35 *Advanced Physical Chemistry* — Nucleonics, scattering of alpha particles, nuclear composition, isotopes, separation of isotopes, mass defects, natural radioactive elements, accelerators, nuclear reactions, nuclear decay, fission. Photochemistry, theory of radiation, light sources, laws of light absorption, study of typical photochemical reactions. Elementary study of phosphorus. Laboratory experiments with Geiger tubes and study of a photochemical reaction. Prep. 11-09; 3 Class Hrs.; 3 Lab. Hrs.; 4 Credit Hrs.

11-36 *Special Topics* — Discussion of advanced topics in inorganic chemistry, thermodynamics or physical chemistry. Subject matter varies from year to year. Prep. 11-35; 3 Class Hrs.; 3 Credit Hrs.

11-41 *Chemical Literature* — Uses of abstracting journals, types and sources of publications, patents as sources of information, sources of financial, statistical and industrial information. Preparation of a detailed bibliography on an original topic. Prep. 11-04; 1 Class Hr.; 1 Credit Hr.

11-43, 11-44 *Senior Research* — Experimental work under direction of staff members. Approval of department head necessary. Each course carries 3 credits and extends throughout a single term. Prep. 11-32; 9 Lab. Hrs.; 3 Credit Hrs.

11-45 *Biological Chemistry* — Properties of and tests for carbohydrates, proteins, amines, nucleic acids, purines, pyrimidines, lipoids, fats. Chemistry of digestion, metabolism and detoxification. Laboratory tests for carbohydrates, proteins, amino acids and fats; enzyme reactions. Prep. 11-20 or 11-26; 3 Class Hrs.; 3 Lab. Hrs.; 4 Credit Hrs.

11-46 *Biological Chemistry* — Clinical analysis for blood content of non-protein nitrogen, urea, creatine, glucose, calcium, phosphate and cholesterol. Chemistry of respiration, urine in relation to pathological conditions, vitamins, hormones. Clinical tests on blood, urine and metabolism. Prep. 11-45; 3 Class Hrs.; 3 Lab. Hrs.; 4 Credit Hrs.

Graduate Courses

11-100, 11-101, 11-102, 11-103 *Advanced Physical Chemistry* — Study of advanced topics in physical chemistry. A sequence of courses extending throughout four consecutive terms. 3 Class Hrs.; 3 Credit Hrs.

11-104, 11-105, 11-106, 11-107 *Advanced Organic Chemistry* — Study of advanced topics in organic chemistry. A sequence of courses extending throughout four consecutive terms. 3 Class Hrs.; 3 Credit Hrs.

11-108, 11-109, 11-110, 11-111, 11-112, 11-113, 11-114, 11-115 *Thesis* — Experimental problem. Carried continuously throughout eight consecutive terms. (To be arranged) Lab. Hrs.; 1-3 Credit Hrs.

11-117, 11-118, 11-119, 11-120, 11-121, 11-122 *Seminar* — Lectures on special topics and student reports on assigned projects. Six consecutive one term courses. 2 Class Hrs.; 2 Credit Hrs.

Drawing

12-01 *Engineering Drawing* — A course in fundamentals of the graphic language as applied in engineering. It comprises a thorough study of multi-planar orthographic shape description as a foundation for the later study of working drawings. The work is laid out to include the following divisions: care and use of drawing equipment, freehand lettering, geometric constructions, elements of nomography, vector diagrams, multiview orthographic drawing including primary and secondary auxiliary views and freehand technical sketching. 6 Lab. Hrs.; 3 Credit Hrs.

12-02 *Engineering Drawing* — This is a continuation of Course 12-01 and includes a study of pictorial drawing, working drawings, and applications of A.S.A. standards. Isometric, oblique, and parallel and angular perspective are studied in the pictorial field. Sections, dimensioning, screw threads, fasteners, and ink tracing are applied to simple detail and assembly drawings. Pencil work on vellum

is made suitable for the various reproduction processes. Prep. 12-01; 6 Lab. Hrs.; 3 Credit Hrs.

12-03 Descriptive Geometry — This is a course in the theory of projection drawing. It is designed to develop powers of visualization and to solve, by revolution, auxiliary and direct method problems involving space relationships. In addition to problems with point, line, and plane, the course includes a study of intersection and development of surfaces, shadows, mining problems, graphic solutions of stresses in framed structures, and other problems of a practical nature. Prep. 12-01; 6 Lab. Hrs.; 3 Credit Hrs.

12-04 Machine Drawing — Detail working drawings of machine parts and assembly drawings of simple machines are made according to recommendations of the American Standards Association. Elements of fundamental design and such simple phases of mechanism as are essential to a complete understanding of machine drawing are included in the course. Fasteners, machine parts and samples of small machines are made available for reference. Drawings are reproduced by students in blueprint, ozalid, blackline and photograph. Prep. 12-01, 12-02; 9 Lab. Hrs.; 2 Credit Hrs.

Geology

13-01 General Geology — A general study of the topics considered in physical geology with emphasis upon the collection and analysis of rocks and minerals. Students are required to make specific trips to places of geological interest near Boston. 3 Class Hrs.; 3 Credit Hrs.

Mathematics

14-01 College Algebra — The study of algebra begins with a thorough review of elementary algebra, analyzing the reasons underlying the processes already learned. The course then covers the usual topics of the first year college algebra course. The student is required at all times to know and be able to explain the reasoning in his work, thus taking the emphasis away from the memorizing of rules, and stressing the logical processes of algebra. Prep. 2 units High School Algebra; 5 Class Hrs.; 4 Credit Hrs.

14-02 Trigonometry — A complete course in plane trigonometry preparing the student to use the subject in the solution of triangles as well as in the more advanced courses where trigonometry is needed. Topics include radians; goniometry; logarithms; solution of triangles; transformation and solution of trigonometric and logarithmic equations; the complex number in various forms; DeMoivre's Theorem. Practice in applied problems is stressed throughout the course. Prep. 14-01; 5 Class Hrs.; 4 Credit Hrs.

14-03 Analytic Geometry — This being a basic course in preparation for any further study of mathematics, it requires a thorough knowledge of the fundamentals of algebra. The course covers Cartesian and polar coordinates; equations of simpler curves derived from their geometric properties; straight lines, circles,

conic sections; intersections; transformation of axes; plotting; solution of algebraic equations of higher degree and of exponential and logarithmic equations; loci problems; complete analysis of second degree equations. Prep. 14-02; 5 Class Hrs.; 5 Credit Hrs.

14-04 *Introduction to Calculus* — The differentiation of algebraic functions and applications. The introduction of the differential at the same time as the derivative helps to bridge the gap which occurs when the student passes from the study of analytic geometry to the infinitesimal of calculus. Topics include continuity and discontinuity; some theory of limits; rates of change; the slope and its applications; successive and implicit differentiation; tangents, normals, angles, maxima and minima; products and fractions. Geometric interpretations and applications are stressed wherever possible. Prep. 14-03; 5 Class Hrs.; 2½ Credit Hrs.

14-05 *Differential Calculus* — This course continues from 14-04. Topics include differentiation of algebraic, trigonometric, exponential, and logarithmic functions; successive, implicit, explicit, partial, total differentiation; curvature; points of inflection; related rates; velocity, acceleration; maxima and minima; indeterminate forms; infinite series; applications in geometry, physics, and mechanics. Prep. 14-04; 4 Class Hrs.; 4 Credit Hrs.

14-06 *Integral Calculus* — The course deals with integration as the inverse of differentiation as well as the limit of summation. Topics include methods of integration; successive, indefinite, definite integrals; constant of integration; rectangular and polar coordinates; areas, center of gravity; moment of inertia; length of curves; volumes; areas of surfaces of revolution; applied problems in work, pressure, etc.; solution of simpler differential equations. Prep. 14-05; 4 Class Hrs.; 4 Credit Hrs.

14-07 *Differential Equations I* — The elementary theory and solution of ordinary differential equations is offered as a general course in mathematics. Although principally a problem course, properties of equations and of their solutions are deduced and applications in some fields of science are analyzed. Prep. 14-06; 4 Class Hrs.; 3 Credit Hrs.

14-08 *Differential Equations II* — Topics include special cases of first order equations; first order higher degree with envelopes; special loci; particular curves; applications in mechanics; general second order linear equation with some special methods; solution in series; Legendre and Bessel equations; elementary partial differential equations of the first and second orders; Fourier series. Prep. 14-07; 4 Class Hrs.; 4 Credit Hrs.

14-09 *Analytic Mechanics I* — Topics include vector analysis; Newton's laws of motion; statics; kinematics, and dynamics of particles and rigid bodies in a plane; moments; friction; energy and work; impulsive motion; vibrations. Prep. 14-06; 4 Class Hrs.; 4 Credit Hrs.

14-10 *Analytic Mechanics II* — This course is a continuation of 14-09. Topics include statics, kinematics, and dynamics of particles and rigid bodies in space; moments; energy and work; impulsive motion; Lagrange's equations; introduction to the special theory of relativity; Lorentz transformation. Prep. 14-09; 4 Class Hrs.; 4 Credit Hrs.

14-12 *Systems of Geometry* — Topics include spherical geometry and trigonometry with a complete solution of the spherical triangle; geometry of Euclid with points and lines at infinity, geometry of the triangle and circle, harmonic division and cross-ratios, inversion, poles and polars; non-Euclidean geometries, the parallel postulate, geometries of Bolyai, Lobachevsky, and Riemann. Prep. 14-06; 4 Class Hrs.; 4 Credit Hrs.

14-14 *History of Mathematics* — A survey of the development of the various branches of mathematics, with special attention to the lives of men who have made outstanding contributions to mathematical science; relations between the growth of mathematical knowledge and the development of civilization. Prep. 14-06; 4 Class Hrs.; 4 Credit Hrs.

14-15 *Advanced Calculus I* — This and the following course are essential to advanced study in both pure and applied mathematics. Some of the topics are special methods of integration, improper definite integrals; hyperbolic functions; theorems on limits, continuity, differentials, mean-value, indeterminate forms; Taylor's series. Prep. 14-06; 4 Class Hrs.; 4 Credit Hrs.

14-16 *Advanced Calculus II* — A continuation of 14-15. Among the topics are applications of partial differentiation; composite and implicit functions; Jacobians; the Riemann definite integral; differentiation of integrals; special definite integrals, the Gamma and Beta functions; Fourier series; Bessel's functions; elliptic functions. Prep. 14-15; 4 Class Hrs.; 4 Credit Hrs.

14-17 *Infinite Series* — Study of limits; infinite series; tests of convergence and divergence; algebraic operations with series; integration and differentiation of series; integration by means of series; applications and uses of special series, including power and Fourier series. Some applications in the solution of differential equations. Prep. 14-06; 4 Class Hrs.; 4 Credit Hrs.

14-18 *Theory of Equations* — A first course in theory and analysis of equations; properties of polynomials, continuity; complex numbers in algebraic, geometric, trigonometric, and exponential form; solution of equations of higher degree; discriminants; various theorems on roots. A proof of the fundamental theorem of algebra is covered. The relations between roots and coefficients and some symmetric functions are included. Theory and use of determinants; complete analysis of n equations in m unknowns. Prep. 14-06; 4 Class Hrs.; 4 Credit Hrs.

14-19 *Solid Analytic Geometry* — A study of space geometry, covering rectangular, polar, cylindrical, and spherical coordinates. Planes, lines, surfaces, and curves in three dimensions are analyzed. Calculus is used with total and partial differentiations. Prep. 14-06; 4 Class Hrs.; 4 Credit Hrs.

14-20 *Special Topics in Mathematics* — Here the student practices the application of his mathematics to special applied problems in the various fields of science. The course may require considerable reference work in special topics chosen so as to be of particular interest to the individual student. (For seniors only) 4 Class Hrs.; 4 Credit Hrs.

14-21 *Basic Mathematics* — A course in algebra, partly review, for non-science students, in preparation for work in trigonometry and physics. High school

algebra is reviewed, using the basic methods of logical reasoning rather than the use of formulae and rules, before the more advanced topics are taken. 3 Class Hrs.; 3 Credit Hrs.

14-22 *Basic Mathematics* — A course for non-science students in plane trigonometry, including logarithms. The usual topics of plane trigonometry through the solution of triangles are covered. Prep. 14-21; 3 Class Hrs.; 3 Credit Hrs.

14-23 *Basic Mathematics* — A continuation of the two preceding courses, with more special topics in algebra and trigonometry, as needed for the study of physics and analytic geometry. Analytic geometry is introduced with emphasis on plotting of graphs and the analysis of some of the equations used in the preceding courses. Prep. 14-22; 3 Class Hrs.; 3 Credit Hrs.

14-24 *Introduction to Mathematics* — An elementary mathematics course for students not taking any other mathematics. Topics included: number systems; basic principles underlying algebra and geometry; translation of stated problems into mathematical symbols and interpretation of mathematical symbols into correct English sentences; uses and evaluation of formulas; solution of first degree and simultaneous equations; story problems; fractions; graphs; variation; binomial theorem; progressions. 3 Class Hrs.; 2½ Credit Hrs.

14-25a; 14-25b *Mathematics of Finance* — A two-semester course for students of finance, starting with the elements of algebra and logarithms, necessary for the understanding and use of the formulas of business mathematics. Other topics include interest, discount, annuities, sinking fund, depreciation, amortization, evaluation of bonds, the use of graphs, interpolation, interpretation of statistical data, insurance. 3 Class Hrs.; 3 (each) Credit Hrs.

14-28 *Probability and Statistics* — The course starts with the elements of probability theory for continuous and discrete distributions. In statistics the representation of data, averages, measures of dispersion, the normal curve, correlation, large sampling theory, and curve fitting are covered with emphasis on applications. Prep. 14-06; 4 Class Hrs.; 4 Credit Hrs.

14-29 *Mathematical Statistics* — This is a continuation of course 14-28. The emphasis is on the mathematical theory of statistics. The topics covered are generalized frequency curves, joint distributions of two variables, multiple and partial correlation, large sampling theory, small sampling theory, "student's" distribution, and the chi-square distribution. Prep. 14-28; 4 Class Hrs.; 4 Credit Hrs.

Physics

15-01 *Physics* — A study of the basic principles of mechanics. The topics treated include units, vectors, linear and angular motion, torque, force, mass, Newton's laws of motion, friction, central forces, moment of inertia, and static equilibrium. Lectures and demonstrations only. 3 Class Hrs.; 3 Credit Hrs.

15-02 *Physics* — This course completes the study of mechanics and starts the subject of electricity and magnetism. Energy, power, machines, vibratory mo-

tion, elasticity, fluids, magnetism and electrostatics are studied. Lectures and demonstrations only. Prep. 15-01; 3 Class Hrs.; 3 Credit Hrs.

15-03 *Physics* — In this course the study of electricity is continued. The topics discussed are direct current, resistivity, direct current circuits, electromagnetism, magnetic circuits and condensers. Lectures and demonstrations only. Prep. 15-02; 3 Class Hrs.; 3 Credit Hrs.

15-04 *Physics* — The basic principles of alternating current generation and series circuits, thermoelectric, photoelectric, and thermionic effects, the diode, the triode and the cathode ray oscilloscope are the topics studied. Lectures and demonstrations only. Prep. 15-03; 3 Class Hrs.; 1½ Credit Hrs.

15-05 *Physics* — A first course in the study of light, the basic principles of wave motion, reflection and refraction of light, mirrors, prisms, lenses, types of spectra and the spectroscope, color, the type, optical instruments, interference effects, the diffraction grating, polarization, and light sources are the topics discussed. Lectures, demonstrations, and laboratory experiments on selected topics in mechanics and light. Prep. 15-04; 3 Class Hrs.; 3 Lab. Hrs.; 4 Credit Hrs.

15-06 — A first course in sound and heat. The subjects covered in sound are types of wave motion, characteristics of sound, vibrations in strings, rods and air columns, resonance, musical scales and intensity levels. In heat, the topics covered are temperature scales, calorimetry, change of state, expansion of solids, liquids and gases, the general gas laws, humidity, mechanical equivalent and transfer of heat. Lectures, demonstrations, and laboratory experiments on selected topics in sound, heat, and electricity. Prep. 15-04; 3 Class Hrs.; 3 Lab. Hrs.; 4 Credit Hrs.

15-07 *Survey of Physical Sciences* — This sequence of courses is designed to give students an understanding of the physical sciences. In this term astronomy, light, and sound are discussed. The classwork will be supplemented by observations, demonstrations, and motion pictures. 3 Class Hrs.; 3 Credit Hrs.

15-08 *Survey of Physical Sciences* — A continuation of 15-07 with consideration of physical geology together with a study of rocks and minerals, their analysis and use. Discussion of the principles of heat, its use and its measurements. Demonstrations. 3 Class Hrs.; 3 Credit Hrs.

15-09 *Survey of Physical Sciences* — The work of 15-07 and 15-08 has prepared the student for the more difficult study of mechanics and electricity. The simple mathematics used is thoroughly discussed and homework is assigned. 3 Class Hrs.; 3 Credit Hrs.

15-10 *Survey of Physical Sciences* — This short term is devoted to a study of chemistry. A broad view of the subject is taken. Yet there is ample time for a thorough investigation of the more interesting topics. 4 Class Hrs.; 2 Credit Hrs.

15-11 *General Physics* — The general topic of consideration is a survey of Newtonian mechanics. Specific topics include methods of measurement, laws of rectilinear motion, uniform circular motion, equations of equilibrium, and mechanics of liquids. Lectures, and demonstrations are coupled with problems

solvable by algebraic or trigonometric methods only. Prep. 14-23; 6 Class Hrs.; 3 Credit Hrs.

15-12 *General Physics* — A survey of the topics of heat, wave motion, sound, and light with some discussion of the laws of X radiation and radioactivity. Lectures, demonstrations, problems and laboratory experiments are performed by the students on the above topics and those of 15-11. Prep. 15-11; 3 Class Hrs.; 3 Lab. Hrs.; 5 Credit Hrs.

15-13 *General Physics* — A study of the topics of electricity and magnetism and introductory electronics. Ohm's Law, induced E.M.F.'s, alternating current, telegraphy and simple vacuum tubes are among topics discussed. Lectures, demonstrations, problems and laboratory work on the above topics. Prep. 15-12; 3 Class Hrs.; 3 Lab. Hrs.; 5 Credit Hrs.

15-14 *Advanced Physics* — A study of gaseous conduction and its applications, electron emission and basic electron tubes including the fundamental circuits of electron tubes. This course is for Chemistry Majors only and the use of chemistry in the manufacture of electron tubes is stressed. The course time is equally divided between class and laboratory periods. Prep. 14-06, 15-06; 2 Class Hrs.; 2 Lab. Hrs.; 3 Credit Hrs.

15-15 *Advanced Physics* — A brief study of experimental spectroscopy. The topics discussed are the general optical principles of spectroscopic apparatus, prism spectrosopes and spectrographs, the photographic process, slit width and illumination, the diffraction grating, types of mounting for the grating, the Bohr atom, the origin of atomic spectra, the spectra of the hydrogen and sodium atoms and quantum numbers. Lectures and laboratory experiments. For Chemistry Majors only. Prep. 14-06, 15-06; 2 Class Hrs.; 2 Lab. Hrs.; 3 Credit Hrs.

15-16 *Electricity and Magnetism* — Selected topics not covered in 15-03 and 15-04 are studied, including work in electrostatics, magnetism, direct and alternating currents, electrical units, and Maxwell's equations. This course serves as an intermediate between Courses 15-04 and 15-24. Prep. 15-06, 14-06; 3 Class Hrs.; 3 Credit Hrs.

15-20 *Optics* — After a brief consideration of wave motion, a detailed study is made of interference and Fraunhofer diffraction of light. A thorough understanding of the fundamental principles of physical optics, which the student is encouraged to use in attacking theoretical and experimental problems, is the objective of the classroom discussions. All topics are illustrated by laboratory experiments, designed to acquaint the student with optical techniques and the handling of instruments of high precision. Prep. 14-06, 15-06; 3 Class Hrs.; 3 Lab. Hrs.; 4 Credit Hrs.

15-21 *Optics* — A continuation of 15-20, with the same general objectives. Diffraction gratings, Fresnel diffraction, and polarization are studied in detail. The latter part of the course is devoted to a consideration of a special topic, for example, spectra, dispersion, Maxwell's equations, which is chosen by the class. All topics are illustrated by laboratory experiments, with increased emphasis on handling instruments of high precision. Prep. 15-20; 3 Class Hrs.; 3 Lab. Hrs.; 4 Credit Hrs.

15-22 Acoustics — This course includes a detailed mathematical study of the modes of vibration of strings, pipes, and membranes, with a consideration of vibrating systems in general. A thorough understanding of fundamental principles which the student is encouraged to use in attacking theoretical and experimental problems, is the objective of the classroom discussions. All topics are illustrated by laboratory experiments, with comparatively simple apparatus, designed to acquaint the student with acoustical techniques. Prep. 14-06, 15-06; 3 Class Hrs.; 3 Lab. Hrs.; 4 Credit Hrs.

15-23 Acoustics — A continuation of 15-22, with the same general objectives, this course applies the principles previously studied to the problems of speech, audition, filters, loud speakers, musical instruments, and the acoustics of auditoriums. All topics are illustrated by laboratory experiments, with more complicated apparatus than that used in the preceding course. Prep. 15-22; 3 Class Hrs.; 3 Lab. Hrs.; 4 Credit Hrs.

15-24 Electronics — This course is designed to make the student familiar with the principles, operation, and application of electronic devices. Direct current circuits, alternating current circuits, measuring devices, thermionic tubes, and electronic principles are studied. Prep. 15-16; 3 Class Hrs.; 2 Lab. Hrs.; 4 Credit Hrs.

15-25 Electronics — Continuing the work of the first term, audio amplifiers and oscillators, high frequency amplifiers and oscillators, frequency measurements, photo cells, detectors, radio, and some special applications are studied. Prep. 15-24; 3 Class Hrs.; 3 Lab. Hrs.; 4 Credit Hrs.

15-26 Modern Physics — A study of molecular relationships, atomic nature of matter and electricity, the corpuscular nature of radiant energy, quantum mechanics, wave theory of matter, atomic structure, spectroscopy and X-ray production and measurement. Prep. 14-06, 15-06; 4 Class Hrs.; 4 Credit Hrs.

15-27 Modern Physics — Atomic spectra, molecular spectra, periodic system, radioactivity, alpha-beta-gamma ray spectra, nuclear structure and devices for studying these phenomena are presented. Some time is also given to artificial transmutation processes, fission and cosmic rays. Prep. 15-26; 4 Class Hrs.; 4 Credit Hrs.

15-28 Electrical Instruments — This is a laboratory course to acquaint the student with the numerous electrical and electronic instruments that are used in research. Their correct use and limitations are carefully studied. Use is made of common d-c and a-c instruments, vacuum tube voltmeters of various types, audio oscillators, radio-frequency generators, cathode ray oscilloscopes, audio and radio-frequency bridges, and impedance bridges. The latter part of the course covers the use of several of the instruments in each problem. Prep. 15-25; 2 Class Hrs.; 4 Lab. Hrs.; 4 Credit Hrs.

15-29 Radio Communications — This course is designed to provide a thorough knowledge of the radio communication system from the microphone to the loud-speaker, by tying together the various components of the system as studied in previous courses. Modulators, radio-frequency amplifiers, and antennas will be studied from the transmitter end of the system. Then the propagation problems

at the various frequencies, the superheterodyne receiver, the basic communication laws that govern intelligence vs. band width, and the sources of interference to radio systems will be covered. Prep. 15-25; 3 Class Hrs.; 2 Lab. Hrs.; 4 Credit Hrs.

Physical Education

16-10, 11, 12 *Physical Training* — All first year men students are required to take Physical Training or R.O.T.C. Health, strength and vitality do not come by chance but by constant attention to those factors involved in their development. It is very essential for the student to acquire good habits of living.

The work in the course includes a minimum of formal calisthenics, special exercise classes for the correction of postural defects, participation in athletic games and sports, including baseball, basketball, football, hockey, track and many types of informal games. All members of the class are also required to learn to swim.

Students wishing to be excused from Physical Training because of physical defects are required to present a petition to the faculty supported by a physician's certificate. 2 Lab. Hrs.; 0 Credit Hrs.

16-21 *Principles of Physical Education* — The course considers the place of physical education in the educational program in the United States. The development of physical education programs based on the changes in society from primitive to modern times is discussed, careful attention being given to the needs of the individual, as well as to the needs of the group. Relationship between medical service and the physical education department is considered, and methods of co-ordination between these two important departments are investigated. Factors such as economic, social and political influences which have an important effect on the conduct of the program are also considered. School health programs are discussed, with particular emphasis upon the medical and physical examinations and the procedures which follow. Diagnostic and remedial techniques, classroom hygiene and principles of preventive and corrective exercise are discussed. The course also includes a consideration of the proper place occupied by interschool and intercollegiate athletics in the physical education program.

Required of all students electing Physical Education as a minor field. 4 Class Hrs.; 4 Credit Hrs.

16-23 *History of Physical Education* — To provide a valuable background for students in this field, this course traces the whole history of physical education from the days of the Greeks and Romans up to the present. Attention is given to special systems of training which have been developed in the United States as well as in foreign countries.

The course is required of all students electing Physical Education as a minor field. 4 Class Hrs.; 4 Credit Hrs.

16-24 *Administration of Physical Education* — This course is designed to acquaint students in the field of physical education with many of the administrative problems which are likely to arise in connection with their work. The subject matter includes a consideration of the objectives of the physical education program,

personnel required, and various allied subjects, such as gymnasia, athletic fields and the construction and maintenance of these units. The conduct of the athletic program including requirements for equipment, arrangements of schedules, coaching, meets, etc., is also included.

Required of all students electing Physical Education as a minor field. 4 Class Hrs.; 4 Credit Hrs.

16-25 *Football* — This course is designed to furnish the student interested in football coaching with a thorough knowledge of the sport. Careful consideration is given to the fundamentals in discussing the plays of each position in the line and backfield. Various well-known offensive and defensive systems are discussed for the purpose of considering their general merits, as well as adaptations to particular situations. Training and conditioning, rules and interpretation, and officiating are given proper attention. 4 Class Hrs.; 4 Credit Hrs.

16-26 *Track and Field Events* — This course considers the care and training of track athletes. Practice schedules, selection of material, conduct of meets, etc., are discussed. The viewpoint from which the topics are treated is that of the student of coaching technique. In connection with this course, action pictures taken from actual performances by world champions, together with moving pictures, are of great value in demonstrating the style and technique of track and field events. 4 Class Hrs.; 4 Credit Hrs.

16-27 *Basketball and Baseball* — The baseball section of the course covers with reasonable completeness the job of the coach in either high school or college to properly administer the sport. The techniques of individual and team play in fundamentals and strategy are covered to make for a well-rounded program.

The basketball section of the course deals with organization and conducting basketball as a phase of interschool competition. Basic fundamentals and techniques as well as the different systems of individual and team play as employed in the major schools of the country are stressed. 4 Class Hrs.; 4 Credit Hrs.

Economics

20-01 *Economic Geography* — After a presentation of the broad field of study in economic geography this course concentrates upon the fundamental geographic and geologic facts and principles that are necessary to an understanding of basic economic institutions. 3 Class Hrs.; 3 Credit Hrs.

20-02 *Economic Geography* — This course continues the study in economic geography by examining the available and potential resources and institutions of the different countries and areas of the world. Prep. 20-01; 3 Class Hrs.; 3 Credit Hrs.

20-03 *Economic Geography* — This course concludes the basic work in economic geography by analyzing intra- and international economic relationships and exploring future possibilities. Prep. 20-02; 3 Class Hrs.; 3 Credit Hrs.

20-05 *Economic Geography* — This course analyzes the geography and the economic resources of the world, particularly those of the United States. Emphasis

is placed upon the part played by these factors in the development of our modern industrial society and upon world affairs. 4 Class Hrs.; 4 Credit Hrs.

20-09 Introduction to Statistics — Graphical Presentation — This course presents the fundamentals of the graphic language as it is employed in business and industrial relationships and is intended to facilitate a better understanding between the fabrication and marketing phases of industrial products. It includes a study of drawing equipment and its use, lettering, geometric constructions, multiplaner orthographic projection, freehand and technical sketching, pictorial representation, and elements of dimensioning, with a study and interpretation of drawings from the various industrial fields. 3 Class Hrs.; 6 Lab. Hrs.; 3 Credit Hrs.

20-11 Economics — After an analysis of the main characteristics of our modern economic order, the course deals with the principles of price determination under competitive and monopolistic conditions, and the principles underlying the distribution of wealth and income into wages, rent, interest and profits. 3 Class Hrs.; 3 Credit Hrs.

20-12 Economics — A continuation of 20-11. Attention is given to the problems of the business cycle, fiscal policy, exchange, banking, international trade, and social movements. The student is encouraged to give serious consideration to government and private enterprise policies and problems. Prep. 20-11; 3 Class Hrs.; 3 Credit Hrs.

20-13 Economic Principles — A thorough grounding in the fundamental principles and laws of economics is the aim of this basic course. The main topics include the nature and organization of production, the nature and importance of wants, the relation of money and prices, the process of exchange, the nature of international trade, the determination of price under conditions of competition and monopoly, the distribution of wealth and income in the form of wages, economic rent, interest, and profits. Prep. 20-03 B.A., 20-05 L.A.; 4 Class Hrs.; 4 Credit Hrs.

20-14 Economic Problems — In this course the application of economic principles to some of the major economic problems of modern society is emphasized. The problems studied include consumption, international economic relationships, labor problems such as wages, unemployment, social security, and collective bargaining and the business cycle. Prep. 20-13; 4 Class Hrs.; 4 Credit Hrs.

20-15 Economic Problems — A continuation of 20-14 Economic Problems. Among the problems considered are the following: price stabilization, the agricultural problem, the relation of government to business including the control of monopolies and public utilities, public finance, and proposals for the remodeling and improving of the economic system. Prep. 20-14; 4 Class Hrs.; 4 Credit Hrs.

20-16 Accounting Principles — A course in accounting designed for those who must have a fundamental knowledge of accounting procedures and devices. The basic accounting cycle is presented. 3 Class Hrs.; 2 Lab. Hrs.; 4 Credit Hrs.

20-17 Accounting Principles — A continuation of 20-16 in which the student is presented with a more intimate knowledge of the accounting activity of the

partnership and corporate types of business organization. The approach is exclusive in that the dominant features of accounting practice are presented and analyzed. Prep. 20-16; 3 Class Hrs.; 2 Lab. Hrs.; 4 Credit Hrs.

20-18 American Economic History — The economic development of the United States is traced from the colonial period to the present with special emphasis upon the period since the Civil War. Stress is laid upon the importance of economic factors and changes in our history in the description of the development of manufacturing, agriculture, domestic and foreign commerce, finance and banking, transportation and labor organizations. Consideration is given to European developments which have been closely related to those of the United States. Prep. 20-11 or 20-13; 4 Class Hrs.; 4 Credit Hrs.

20-20 Statistics — This course is intended to give the student an understanding of statistical principles and methods and their practical application. A study is made of the nature, sources, collection, and organization of statistical facts; the presentation of such facts in tabular or graphic form; the various averages, measures of dispersion; and probability theory including the bases of quality control. Laboratory periods provide an opportunity for each student to demonstrate his ability to apply the principles studied. 3 Class Hrs.; 2 Lab. Hrs.; 4 Credit Hrs.

20-21 Statistics — The major portion of this continuation of 20-20 involves three subjects; time series analysis, including methods of obtaining trends, seasonal indexes, and the measurement of cyclical variation; correlation analysis and the construction and use of index numbers. Prep. 20-20; 3 Class Hrs.; 2 Lab. Hrs.; 4 Credit Hrs.

20-22 Industrial Statistics I — The increasing use of statistics in business and in the field of industrial engineering makes essential an understanding of the fundamental methods and applications of statistical analysis. These are studied from the point of view of the user of statistical data. Statistical theory and simple mathematical analysis of statistical procedures are included as necessary to understanding the practical uses, as well as the limitations, of statistical inference in the work of the industrial engineer. The topics considered include the collection and presentation of statistical data in tabular and graphic form, the uses and construction of frequency distributions, averages, measures of dispersion and skewness; and the normal curve. 2 Class Hrs.; 2 Lab. Hrs.; 3 Credit Hrs.

20-23 Industrial Statistics II — A continuation of 20-22, this course takes up regression and correlation in some detail, followed by time series analysis. The standard procedures for computing and eliminating trend, and seasonal variation, and the measurement of cyclical fluctuation, are studied, as well as the construction of index numbers. Prep. 20-22; 2 Class Hrs.; 2 Lab. Hrs.; 3 Credit Hrs.

20-24 Money and Banking — This course considers the problems of getting money supply and keeping it sound. It deals with the internal problems of managing the bank's funds to make profits. The external control through Federal Reserve policy is taken up and integrated with both the bank's viewpoint and the aims of the Government in financing its budget. Prep. 20-15; 4 Class Hrs.; 4 Credit Hrs.

20-25 *Business Cycles* — This course covers the causes of unstable equilibrium and the ways it is measured, with its effect on our economy. Methods of making short range and long range forecasting; sources of material on business conditions and sequence and amplitude of this material are covered next. Finally the forecasting services are analyzed and current business conditions studied. Prep. 20-14; 4 Class Hrs.; 4 Credit Hrs.

20-26 *Labor Economics* — This course begins with a preliminary study of the growth of a working class and a brief analysis of the labor problem. It then takes up the organization of labor unions, the structure of management and its objectives, collective bargaining, and public regulation of labor relations. Within this framework, the problems of the wage structure in the American economy, occupational and geographical wage differences, and the general problem of economic security are discussed. Prep. 20-14; 4 Class Hrs.; 4 Credit Hrs.

20-27 *International Economic Relations* — A careful examination of the important principles of international trade and finance precedes a critical survey of the international commercial policies of modern nations, with special reference to the United States. Such broader problems as the international control of raw materials, exchange restrictions, international cartels and the economic activities of the League of Nations and other international organizations are considered. Prep. 20-15; 3 Class Hrs.; 1½ Credit Hrs.

20-28 *Economic Systems* — After developing criteria for evaluating the different economic systems, the course proceeds to a comparative analysis of capitalism, co-operation, socialism, communism, and fascism. The problems of economic planning receive particular attention. Prep. 20-15; 4 Class Hrs.; 4 Credit Hrs.

20-31 *Advanced Economic Theory* — A critical review of the origin and development of economic thought. After a brief account of the contributions of Plato and Aristotle, the early Christian fathers, and the writers of the Middle Ages, each of the main schools of economic thought is taken up in turn: the Mercantilists, the Physiocrats, the Classical School, the Socialists, the Historical School, the Austrian School, and the Neo-Classical School. Prep. 20-15; 4 Class Hrs.; 4 Credit Hrs.

20-32 *Advanced Economic Theory* — This course introduces the student to the more complex aspects of economic theory. Its primary purpose is to familiarize the student with the work of contemporary economists and with the basic ideas underlying the theoretical problems now most widely considered. Prep. 20-31; 4 Class Hrs.; 4 Credit Hrs.

20-40 *Business and Government* — This course is directed toward the development of an understanding of the part played by government (local, state, national) in economic affairs, both directly and indirectly, and of the relationships between business and government. The attitude of government toward business and toward the economic institutions affecting business, as evidenced by legislative, judicial, executive and administrative actions, will be analyzed with some reference to problems of a mobilized economy. Prep. 20-15; 4 Class Hrs.; 4 Credit Hrs.

20-51 *Public Finance* — This is a treatment of fiscal policies and practices at the national, state, and local levels of our government. Prep. 20-15; 3 Class Hrs.; 3 Credit Hrs.

Education

21-01 *History of Education* — Education is considered as the means by which nations have attempted to realize their social and spiritual ideals. This course traces the history of education from ancient times through the Greek and Roman periods, the Middle Ages, the Renaissance and Reformation, down to John Locke and the Enlightenment. The course is concerned with the development of points of view as well as with details of organization and practice. 4 Class Hrs.; 4 Credit Hrs.

21-02 *History of Education* — Beginning with the emotional reaction against formalism in life as exemplified by Rousseau, this course takes up the immediate background of modern education and traces the development of national systems. The influence of such men as Pestalozzi, Herbart, Froebel, Spencer, Mann, Barnard, Dewey, and others is studied in detail. The course closes with a consideration of present tendencies in education. 4 Class Hrs.; 4 Credit Hrs.

21-03 *Educational Measurements* — This course concerns itself with current problems in the field of educational tests and measurements. Most of the lectures are given over to a discussion of the construction and use of new type objective tests, with particular reference to the field of secondary education. The relative merits of the essay and the objective examination are considered in connection with the problem of grades and grading systems. Enough elementary statistics are included to enable students to use intelligently the results of testing. Emphasis is placed upon the importance of accurate interpretation of test data and upon the futility of indiscriminate testing. 4 Class Hrs.; 4 Credit Hrs.

21-04 *Educational Organization and Administration* — A study of the principles underlying the organization, administration, and supervision of secondary schools in the U. S. A. The course is illustrated with suitable problems taken from actual practice. The emphasis will be placed on the classroom teacher's part in administration. It should be of special interest to students who contemplate teaching as a vocation. 4 Class Hrs.; 4 Credit Hrs.

21-06 *Educational Sociology* — The course considers the relationship between education and sociology. Educational objectives are set up from the findings of sociological research and the traditional curriculum is examined in the light of these objectives with a view towards its reconstruction. A critical attitude is maintained toward philosophical implications which will inevitably arise in the course. 4 Class Hrs.; 4 Credit Hrs.

21-07 *Educational Philosophy* — A study of the relationship between the science of education and the philosophy of education is followed by a consideration of philosophies of education in the light of basic theses of the history of philosophy. Such topics as evolutionism, behaviorism, pragmatism, instrumentalism, and progressive education are viewed in the perspective of the history of philosophy. 4 Class Hrs.; 4 Credit Hrs.

21-08 *Principles of Secondary Education* — A critical study of the aims, objectives and functions of secondary schools. The needs of secondary school pupils in a democracy and the ways in which these needs are met are carefully considered. Relations of the junior high school, the senior high school, and the junior college to American life are discussed. 4 Class Hrs.; 4 Credit Hrs.

21-09 *Methods of Teaching in Secondary Schools* — A fundamental course in methods of teaching. Such topics as traditional vs. democratic types of teaching and the unit plans and procedures are discussed. Special attention is paid to the problems and techniques of planning, drill, questioning, visual and audio aids and classroom management. The problems of job placement in the teaching profession will be included in this course. 4 Class Hrs.; 4 Credit Hrs.

Government

22-01 *American Government* — The influence of the early state governments and the Articles of Confederation upon the Constitution is studied. Following an analysis of the Constitution the rest of the term is concerned with the relation of individuals to government; the Constitutional safeguards for freedom; the focusing of public opinion through parties; and party activity in gaining public office. 3 Class Hrs.; 3 Credit Hrs.

22-02 *American Government* — The structure, powers and work of Congress is followed by a similar approach for the executive and of the judiciary. Administrative problems relating to civil service, national finance, interstate commerce, and government regulation of business are also analyzed. Prep. 22-01; 3 Class Hrs.; 3 Credit Hrs.

22-03 *American Government* — The study of the National Government will be concluded. Such topics as Agriculture, Conservation, Labor, Foreign Relations and territories will be discussed.

The remainder of the term will consist of a survey of State and Local Governments under such headings as State Constitutions, State Legislatures, the Governor, State Judiciary, State Finance, Municipal Government and Administration. Prep. 22-02; 3 Class Hrs.; 3 Credit Hrs.

22-05 *Aspects of the National Government* — This course will consist of an analysis of the United States Constitution and the distribution of governmental powers. From this foundation the development of the three branches of government will be studied. The Presidency will be considered under the headings of executive powers, military powers, control of foreign affairs and legislative powers. The powers, organization, procedure of Congress and of the Federal judicial system will be examined and some suggested reforms will be discussed. 4 Class Hrs.; 2 Credit Hrs.

22-06 *Municipal Government* — This course constitutes a critical study of local government with particular emphasis upon Massachusetts practice. Consideration is given to the implications of urban growth, the legal status of municipal corporations, politics and popular control, forms of government, administrative

organization, municipal functions, federal-state-local relations, metropolitan government and the evaluation and control of municipal services. Civic responsibility and participation is stressed. The student is expected to relate the course content to the political structure of his home community. 3 Class Hrs.; 3 Credit Hrs.

22-08 Current Political Issues — This course is designed to present a broader understanding of current national and international issues. Conflicting ideologies and pertinent domestic problems such as financing the government and protecting civil liberties will be studied. The course concludes with an examination of specific problems in the conduct of the foreign affairs of the United States. 3 Class Hrs.; 3 Credit Hrs.

22-11 Foreign Governments — An examination is made of political institutions and ideologies in major, contemporary national states. The course deals with the nature and mechanics of political democracy as exemplified within French, English and other states and the Commonwealth Governments through a survey of constitutional development, parties and elections, legislative and executive responsibility, cabinet government, public administration, the legal system, local government and current political problems and policies. 4 Class Hrs.; 4 Credit Hrs.

22-12 Foreign Governments — This course includes an examination of the institutions, ideologies and mechanics of totalitarian states. Particular emphasis is placed upon the characteristics of Marxist and Fascist concepts of government as practiced in Russia, Germany and Italy in recent decades. Historical background and postwar developments are stressed. Prep. 22-11; 4 Class Hrs.; 4 Credit Hrs.

22-13 Political Theory — Ideas of Justice, Liberty and the organization of the State from the time of the ancient Greeks through Machiavelli will be discussed. The Church-State controversy from the time of the early Church fathers through the Conciliar Movement will be emphasized. 4 Class Hrs.; 4 Credit Hrs.

22-14 Political Theory — Beginning with the writers of the Protestant Reformation there will follow a survey of the royalist and anti-royalist theories, the conception of sovereignty, the social contract school, and the attack on natural law by the utilitarians. The course will conclude with a study of the Communist and Fascist political philosophies and western democracy's answer to the challenge. 4 Class Hrs.; 4 Credit Hrs.

22-15 American Constitutional Law — This course illustrates through the study of cases the formal adoption and expansion of judicial review. Cases involving political liberty, the principle of the inviolability of contracts, what constitutes due process of law, the police power of the state, and the powers of the state to tax will be made the basis of class discussion. 4 Class Hrs.; 4 Credit Hrs.

22-16 American Constitutional Law — A case study is made of the monetary powers of the Federal Government. The interstate commerce clause will be analyzed as a power to regulate. Application will be made to regulation of business monopolies and of labor unions. The remainder of the course will be given over to recent cases and recent trends. 4 Class Hrs.; 4 Credit Hrs.

22-17 *International Politics* — This course constitutes a study of the fundamental principles underlying the conduct of international politics. Nationalism, imperialism, ideologies, geography, technology, and other foundations of power are analyzed. The problem of world law and order in the contemporary international setting is emphasized. 4 Class Hrs.; 4 Credit Hrs.

22-18 *International Organization* — This course begins with a brief historical survey of significant ideas about international organization. After studying the League of Nations, main emphasis is placed on the structure, functions, and problems of the United Nations and its specialized agencies. The course concludes with an analysis of the world government movement. 4 Class Hrs.; 4 Credit Hrs.

22-20 *Public Administration* — An examination of the existing administrative structure and of the efforts at reorganization will be followed by a discussion of the problem of personnel, including such matters as recruiting, examining, types of training, conditions of employment, morale and retirement systems. Problems of assessment and budgeting will conclude the term's work. 4 Class Hrs.; 4 Credit Hrs.

22-21 *Public Administration* — Planning, supervision and administrative leadership will be discussed. The merits and defects of administrative procedure and administrative adjudication are considered. The problem of holding administrators responsible, through statutory or policy limitations, whether by judicial review of administrative fact finding and procedure or the more informal attempts through government controls and pressure group influences, will conclude the course. Prep. 22-20; 4 Class Hrs.; 4 Credit Hrs.

22-22 *International Law* — This course deals with the development of international law and its significance in world politics. Topics such as recognition, treaties, state responsibility, war crimes, and interpretation of the United Nations Charter are studied. Problems inherent in modernizing the law of nations are stressed. 4 Class Hrs.; 4 Credit Hrs.

22-23 *American Foreign Policy* — This course concentrates on the role of the United States in world politics, principally since the end of World War II. An analysis of the governmental mechanism for the conduct of United States foreign affairs, fundamental factors affecting American foreign policy and the major problems confronting the United States receive stress. 4 Class Hrs.; 4 Credit Hrs.

History

23-01 *Western Civilization* — This course traces the growth of human culture and civilization from palaeolithic stone age cultures to the height of Greek democracy developed in Athens. The religious and institutional heritage bequeathed by the Sumero-Babylonian and Egyptian civilizations and the political, artistic and philosophical contributions of the Greeks to western civilization receive emphasis. Ancient solutions to analogous modern problems relates this course to life in the 20th century. 4 Class Hrs.; 4 Credit Hrs.

23-02 *Western Civilization* — This course includes the study of Roman civilization and its decline. Study of the antecedents, rise, and growth of the Christian religion is an important section of this course. The development of mediaeval institutions, including feudalism, serfdom, universities, and the Papacy, receive stress. The loss of political liberty and economic security, the collapse of learning and the rule of law consequent upon the breakdown of Roman civilization are compared with world trends in the 20th century. Prep. 23-01; 4 Class Hrs.; 4 Credit Hrs.

23-03 *Western Civilization* — This course studies the disintegration of feudalism and the rise of national states; the decline of papal power and the rise of national churches; the development of learning to produce the Renaissance and the Age of Reason; the Copernican, Cartesian, and Newtonian intellectual revolutions; and the revival of commerce and trade giving rise to the establishment of the capitalistic economic system. The rebuilding of western civilization for the third time makes possible frequent reference to 20th century potentialities. Prep. 23-02; 4 Class Hrs.; 4 Credit Hrs.

23-04 *Western Civilization* — This course describes the practical results in Europe of the Newtonian intellectual revolution and the reactions against that revolution and its practical results. The practical results included the French Revolution, the 19th century nationalist movement, and the economic philosophy of the classical economists. The reactions against Newtonianism included the Wesleyan, Romantic and Oxford movements, and the collectivist and evolutionary philosophies of the 19th century. Study of the industrial revolution and the Darwinian intellectual revolution makes the 20th century intelligible. 4 Class Hrs.; 2 Credit Hrs.

23-05 *Recent American History* — The contending political, economic and social forces in American domestic history of the 20th century and America's rise to world leadership are the main themes of this course. This takes the student from McKinley laissez-faire through the Fair Deal, and from the emergence of the United States as a world power in the early 1900's to its present position of dominance. 6 Class Hrs.; 3 Credit Hrs.

23-06 *Recent European History* — The contemporary era of conflict since 1914 is treated in this course. A discussion of Darwinian concepts which influence the 20th century is followed by a detailed study of the varied applications of these ideas in the major European states. The course deals briefly with military aspects of both world wars and with postwar attempts to secure lasting peace. The Soviet Russian regime and basic Communist beliefs are examined in detail to provide an understanding of contemporary world developments. 3 Class Hrs.; 3 Credit Hrs.

23-08 *Contemporary Orient* — This course concerns 20th century Asia, its problems and its basic civilization. Modern India, China, and Japan receive most emphasis. The social and religious aspects of Hinduism, the economic and population problems, and the character of British rule form the background for the study of Gandhi's non-violent war of independence. The Chinese struggle against foreign imperialism is seen against the backdrop of the Japanese-American quarrel over the Open Door as the basis for the rise of communist China. 3 Class Hrs.; 3 Credit Hrs.

23-09 *History of Ancient Greece* — This course concerns the origins and development of Greek civilization. The education in civilization afforded the barbarian Hellenic invaders of the Aegean area by the pre-hellenic Minoans; the political evolution of Hellenic society from tribe to city state organizations; the growth and application of Greek religious, ethical, and political ideas; the development and ultimate clash of totalitarian and democratic forms of government resulting in both the apogee and the decline of Greek civilization are basic to this course. Prep. 23-01; 4 Class Hrs.; 4 Credit Hrs.

23-10 *History of Rome* — The content of this course divides itself equally between the study of the rise of Roman power under a republican form of government and the decline of that power under the imperial form of government. Special inquiry is made into the social, economic, intellectual, artistic, and religious expressions of these two phases of Roman political history. Prep. 23-02; 4 Class Hrs.; 4 Credit Hrs.

23-11 *Eighteenth Century Europe* (1700-1814) — This course begins with a discussion of the Age of the Enlightenment, shows the application of Newtonian concepts to such varied fields as religion, economics, government, and agriculture, and then examines the resulting social upheavals.

The French Revolution is traced from the attack on the Bastille, through the days of Robespierre's controversial Republic of Virtue, till the close of the Napoleonic Empire. Special emphasis is placed upon the social and intellectual significance of the Revolutionary Period. 4 Class Hrs.; 4 Credit Hrs.

23-12 *Nineteenth Century Europe* (1814-1914) — This course deals with Europe during a century of comparative peace but tremendous social change. After examination of the period of reaction following the Congress of Vienna, attention shifts to those forces transforming European society — especially the Industrial Revolution and Nationalism. Special emphasis is placed upon intellectual movements, such as Liberalism and Socialism. The various social, economic and political factors which led to World War I are analyzed. 4 Class Hrs.; 4 Credit Hrs.

23-13 *England to 1720* — This course is a study of English history from its beginnings to the Age of Walpole. Special emphasis is placed upon the relations between church and state before, during, and after the English Reformation, upon the growth of 17th century English social classes from their feudal basis, and upon the origin and development of the English constitution and political institutions. Personalities chiefly instrumental in the promotion of English liberties receive special study. 4 Class Hrs.; 4 Credit Hrs.

23-14 *England Since 1720* — This course begins with the study of the Newtonian intellectual revolution as providing the rationale for majority English action during the 18th and much of the 19th centuries. The agricultural revolution and industrial revolution set the stage for England's *Age of Reform* in the 19th century. Study of the Darwinian intellectual revolution, imperialism and collectivism help to make 20th century world wars intelligible, as well as to form the background explaining the emergence of England as a socialist democracy. 4 Class Hrs.; 4 Credit Hrs.

23-15 *English Constitutional History* — The English constitution and common law; local government versus central government; the origin and growth of Parliament; the development of the British cabinet system; and a comprehensive study of statutes and documents. 4 Class Hrs.; 4 Credit Hrs.

23-16 *American Constitutional History* — The historical development of the United States Constitution with particular emphasis on its progressive adjustment to the changing social and economic order. 4 Class Hrs.; 4 Credit Hrs.

23-17 *American History to 1820* — The prime objective in this course is to demonstrate the foundations and early development of modern American institutions, ideals and practices. Starting with the earliest settlements of various nationalities, it goes on to take up the English predominance, the development of a distinct American character, the break with England, and the struggle to form a nation, the second war for independence, the gradual evolution of American democracy. 4 Class Hrs.; 4 Credit Hrs.

23-18 *The United States, 1820-1890* — The chief topics of study in this course are: the westward movement, the industrialization of the Northeast, and Jacksonian Democracy; the struggle between Jacksonianism and Hamiltonianism; the background, the rise, and the development of the sectional problem; the victory of the industrial North over the agricultural South; the great era of economic expansion and the problems, perils and protests of the '70s and '80s. 4 Class Hrs.; 4 Credit Hrs.

23-19 *Latin America to 1810* — The course begins with a study of pre-Conquest America and of the European background of Spanish and Portuguese colonization of the New World. It goes on to the exploration and settlement of Latin America and the establishment of colonial institutions. Some time is spent on social and intellectual life in the colonies, and the course is concluded with a study of the forces that gave rise to the Wars for Independence. 4 Class Hrs.; 4 Credit Hrs.

23-20 *Latin America Since 1810* — This course is designed to give an understanding and appreciation of Latin America rather than a detailed history of all the countries. The Wars for Independence, the founding of the new nations, and the rise of caudillism are examined in detail. A study is made of representative caudillos. Significant political and cultural developments and international affairs receive careful consideration. Special attention is paid to relations with the United States. 4 Class Hrs.; 4 Credit Hrs.

23-25 *Eastern Civilization to 1300* — This course concerns the origin and development of civilization in China, India, Iran and Japan to the 13th century A.D. New Chinese and Indian archaeological evidence, those developments which resulted in the emergence in positions of social preeminence of the scholar in China, the soldier in Japan, and the priest in India, the basic philosophical and religious ideas before and during the rise and spread of Buddhism, and the classical literature of the East in historical perspective are stressed. 4 Class Hrs.; 4 Credit Hrs.

23-26 *Eastern Civilization 1300-1900* — This course reviews the basic essentials of Indian, Chinese and Japanese civilizations and the further development of

these civilizations under the impact of Islamic conquest in India and western civilization in all three areas. The culture conflict that resulted from these impacts forms an important aspect of this course as well as the cultural synthesis resulting from the conflict. The era of European imperialism in Asia in the 19th century is also stressed. 4 Class Hrs.; 4 Credit Hrs.

Philosophy

24-01 *Introduction to Philosophy* — Basic meanings, issues, and structures are first presented. The chief fields, the interpenetrations with the several arts and sciences, the schools of thought, and the methodologies are then studied. Presented both as a body of knowledge and as a way of thinking, philosophy is viewed in this course as a set of data and values essential to the better understanding of human experience. Epistemological and teleological considerations are emphasized. 4 Class Hrs.; 4 Credit Hrs.

24-02 *Problems of Philosophy* — Problems arising both from what we do know and from what we do not know about the complex nature of human experience are studied and systematized. Data from such fields as semantics, logic and psychology are introduced to throw light on the problems at hand. The persistent problems in epistemology, teleology and metaphysics are examined. The validity of knowledge, the mind-body dilemma, and freedom of will are representative topics. Prep. 24-01; 4 Class Hrs.; 4 Credit Hrs.

24-03 *History of Philosophy* — Historical survey, beginning with the early Greek period. The personalities and principles are studied as a basis for constructing a continuing sense of philosophical thought and comparative analysis. The course progresses through the patristic and scholastic eras. 4 Class Hrs.; 4 Credit Hrs.

24-04 *History of Philosophy* — Studying the transitional era following the Medieval period, the historical survey considers the great ideas and systems of thought down through the modern era. Special attention is given present-day contributions. Prep. 24-03; 4 Class Hrs.; 4 Credit Hrs.

24-05 *Philosophy of Religion* — Types of religious belief and practice are analyzed and evaluated from the philosophical point of view. Problems related to the nature of God, validity of religious claims, human freedom, immortality, and natural evil are studied. Theological and ethical considerations are introduced. 4 Class Hrs.; 4 Credit Hrs.

24-06 *Logic* — Modified or practical logic is stressed in this course; formal and classical structures are given limited attention. Fallacies resulting from semantic confusion and methodological error are noted. The meanings of causality and the several types of thinking are examined. Practice drills in effective thought processes and clearer verbalization are emphasized. 4 Class Hrs.; 4 Credit Hrs.

24-07 *Foundations of Philosophy* — Philosophy as a way of thinking, as well as a set of data, is presented in light of its nature, methodology, and schools of thought. Philosophical approaches to problems of knowledge, human relations,

and value judgments are studied. The interpenetrations between philosophy and science are emphasized. The two basic subdivisions in the course consist of ethics and metaphysics. 3 Class Hrs.; 3 Credit Hrs.

24-08 *Foundations of Philosophy* — A continuation of 24-07. The two basic subdivisions in this second half consist of principles and problems in social philosophy and in the philosophy of religion. Prep. 24-07; 3 Class Hrs.; 3 Credit Hrs.

Psychology

25-01 *Introductory Psychology* — This course with its companion course, General Psychology (25-02), presents the major concepts from most areas of psychological investigation. In this first term the emphasis is placed upon the experimental approach to the study of behavioral data including growth and development, learning, perception and motivation. 4 Class Hrs.; 4 Credit Hrs.

25-02 *General Psychology* — Continuing the emphasis on general concepts this course considers the sensory basis of response, individual and group differences, mental testing, attitude formation, and personal adjustment. Prep. 25-01; 4 Class Hrs.; 4 Credit Hrs.

25-04s *Social Psychology* — The relationship of man to the group; a study of his patterned social behavior, his morale, customs and myths, his social structures and institutions, and his conscious and unconscious motives and motivation. Prep. 25-02; 5 Class Hrs.; 2½ Credit Hrs.

25-05s *Applied Psychology* — Principles of psychology related to industry, personnel, education, the professions, and personality development in everyday life. Prep. 25-02; 5 Class Hrs.; 2½ Credit Hrs.

25-07 *Psychology* — This is an introduction to psychology. The aim is to present to engineers a broad overview of the wide and varied interests, efforts, pursuits and problems of psychology and psychologists. Among those discussed are such key problems as growth and development, motivation, individual differences, measurement, and statistical concepts, psychology of sensation and perception. Wide general reading will be required. 3 Class Hrs.; 3 Credit Hrs.

25-08 *Psychology* — A continuation of 25-07. Selected topics for discussion emphasize the psychology of group behavior, personality development and integration. Wide reading will be required. Prep. 25-07; 3 Class Hrs.; 3 Credit Hrs.

25-09 *Statistics in Psychology* — An introductory course dealing with elementary descriptive statistics, graphs, significant numbers, measures of central tendency and dispersion, types of distributions, and elementary correlation. Laboratory work in computational techniques and the use of computing machines will be included. Prep. 25-02; 4 Class Hrs.; 4 Credit Hrs.

25-10 *Statistics in Psychology* — An advanced course in which consideration is given to product moment, biserial, tetrachoric, and rank order correlation. Errors of sampling, statistical hypotheses, and tests of significance are treated with reference to experimental methods in psychology and education. Prep. 25-09; 4 Class Hrs.; 4 Credit Hrs.

25-11 *Individual Differences* — An account of the scientific principles basic to the investigation of human differences. Attention is directed to the history of the field, the techniques which have evolved, and the bearing which this field has upon the special disciplines within psychology, such as experimental, educational, clinical, measurements, and child. Hence, this course serves as a foundation for the advanced courses. Prep. 25-02; 4 Class Hrs.; 4 Credit Hrs.

25-12 *Experimental Psychology I* — This course emphasizes research methods and techniques for investigating the conditions of learning. Examples of topics which are covered are Learning as a function of Motive-Incentive conditions, age, sex, kind of material, amount of material, and the mode of attack. These factors are considered in the light of current learning theory. Prep. 25-02; 3 Class Hrs.; 3 Lab. Hrs.; 4 Credit Hrs.

25-13 *Experimental Psychology II* — This course emphasizes methodology. Topics covered in class and laboratory sessions include attention, the nature of illusions, perception of form, color, and space, and reading as a problem in perception. Prep. 25-02; 3 Class Hrs.; 3 Lab. Hrs.; 4 Credit Hrs.

25-14 *Experimental Psychology III* — The structure and function of the sense organs. Emphasis is placed on the methods of investigating the sensory processes of vision, hearing, olfaction, taste, and the skin senses. Laboratory reports are required. Prep. 25-02; 3 Class Hrs.; 3 Lab. Hrs.; 4 Credit Hrs.

25-15 *Educational Psychology* — The introductory course in educational psychology is studied as an applied psychology in the field of education. It is intended not only for the preparation of future professional teachers, but for all those who may have an interest in the education of the youth. Child development and personality, guidance, theories of learning and motivation, and basic principles of mental hygiene are special topics which are surveyed in this course. Prep. 25-02; 4 Class Hrs.; 4 Credit Hrs.

25-16 *Educational Psychology* — Problems indigenous to the concept of the school as an important aspect of the growing child's environment are considered. The course is research oriented in the sense that information on such problems is sought in the research literature. Learning, motivation, pupil adjustment, subject disability, and pupil evaluation are some of the areas explored. Prep. 25-15; 4 Class Hrs.; 4 Credit Hrs.

25-17 *Measurements I* — An intensive workshop course in the theory, selection, administration, scoring and interpretation of individual intelligence tests. Each student is required to test a substantial series of subjects provided by the instructor. Intensive training will be given in the Wechsler-Bellevue Adult Scale, the Children's Wechsler, the Stanford-Binet and various developmental scales. Prep. 25-11; 4 Class Hrs.; 4 Credit Hrs.

25-18 *Measurements II* — An intensive workshop course in the theories underlying personality evaluation by psychometric means. Each student will be required to act as a subject for and administer a variety of personality instruments. The course will emphasize the clinical approach to the study of the individual personality. In addition to obtaining thorough familiarity with conventional

questionnaires and tests in the field of personality, some introductory information concerning projective techniques is provided. Prep. 25-11; 4 Class Hrs.; 4 Credit Hrs.

25-19 *Measurements IV* — A workshop course in the theories underlying aptitude testing. The course will deal with objective evaluative instruments, with special emphasis upon the use of standardized testing procedures in industry. Each student will be required to act as a subject, and to administer and score a variety of tests. Prep. 25-02; 4 Class Hrs.; 4 Credit Hrs.

25-20 *Measurements III* — Further practice with the Wechsler-Bellevue and the Binet. In addition group tests of general intelligence, scholastic aptitude, and other aptitude testing instruments will be demonstrated and critically evaluated. Emphasis will be upon the selection of the appropriate instrument for the measurement of scholastic and other aptitudes from the varied offerings in the field. Prep. 25-17; 4 Class Hrs.; 4 Credit Hrs.

25-29 *Psychology of Personality* — A systematic study of personality formation. Approaches to the understanding of personality are made through a review of the physical and mental development of the individual, a study of the social influences upon him, and a consideration of several important theories about him. Prep. 25-02; 4 Class Hrs.; 4 Credit Hrs.

25-31 *Abnormal Psychology* — The study of personality deviants. Attention is directed to the historical development of the field with emphasis upon the development of theories of abnormal behavior and their classification, the rise of institutional care of the mentally ill, and the beginnings of humanitarian concepts of deviancy. Prep. 25-29; 4 Class Hrs.; 4 Credit Hrs.

25-32 *Abnormal Psychology* — This course consists of systematic exploration of concepts of normality and abnormality. The etiology and dynamics of the various patterns of psychological disturbances are described and discussed. The relationship existing between psychological disturbances and the socio-cultural order are carefully defined. Prep. 25-31; 4 Class Hrs.; 4 Credit Hrs.

25-33 *Social Psychology* — A study of the psychological principles underlying human relations with emphasis upon motivation, nature and development of groups, social movements and institutions, antisocial behavior, social controls, leadership, co-operation, war, propaganda, and prejudice. In addition, the course seeks to elucidate the methods and techniques which yield trustworthy data regarding social phenomena. Prep. 25-02; 4 Class Hrs.; 4 Credit Hrs.

25-34 *Child Psychology* — A systematic study of the growth and development of infants and young children, their characteristic patterns of behavior, motivations and needs. Prep. 25-02; 4 Class Hrs.; 4 Credit Hrs.

25-35a *Industrial Psychology* — A study of the basic principles and techniques of the application of psychology to industrial efficiency and employee satisfaction. The presentation is thoroughly practical and realistic with emphasis upon psychological tools that management finds serviceable in the selection, placement and motivation of employees. Attention is paid to the role of psychological tests in choosing employees, the prevention of industrial "fatigue," the manage-

ment of specific problems such as absenteeism, voluntary restriction of output, accident-proneness, alcoholism, recreation and other special problems. The role of government and union in industrial operations is taken into account. Prep. 25-02; 3 Class Hrs.; 3 Credit Hrs.

25-36a *Industrial Psychology* — An intensive course in personnel counseling and other preventive and remedial procedures for keeping the worker on the job and producing at high efficiency. Emphasis is placed upon working with the problem individual but some attention is given to methods and techniques in dealing with problems in the group situation. Prep. 25-35a; 3 Class Hrs.; 3 Credit Hrs.

25-37 *Child Psychology* — A further systematic exploration of emerging patterns of childhood behavior and their implications for adult life. Parental functions, problems pertaining to child rearing and their relationship to the current society are discussed. Prep. 25-34; 4 Class Hrs.; 4 Credit Hrs.

25-38 *Physiological Psychology* — A survey of the pertinent physiological fact and theory oriented to the relation of neuro-anatomy and psychology. The structural and functional aspects of receptors, muscles, glands, and nervous tissue (peripheral nerves, spinal cord and brain) are emphasized. Permission of instructor required. Prep. 25-02; 4 Class Hrs.; 4 Credit Hrs.

25-39 *Physiological Psychology* — A continuation of 25-38. The integrative action of the central nervous system, and the problem of variability of behavior are the main topics. Permission of instructor required. Prep. 25-38; 4 Class Hrs.; 4 Credit Hrs.

25-41 *Advanced Psychology* — The current status of psychology among the sciences is considered in the light of its history. Emphasis is placed upon the period from Descartes (circa 1650) to the early 1900's and attention is directed to the philosophical and physiological antecedents of the emergence of psychology as a scientific discipline. Prep. 25-11; 4 Class Hrs.; 4 Credit Hrs.

25-42 *Advanced Psychology* — A critical survey of the major schools of psychology which have influenced the development of modern psychology. Contemporary systematic trends are evaluated in the light of their historical development. Major schools or systems considered are Structuralism, Functionalism, Behaviorism, Gestalt Psychology and the Depth Psychologies. Prep. 25-41; 4 Class Hrs.; 4 Credit Hrs.

25-50 *Reading Improvement* — A course designed to assist students who wish to improve their study and reading habits. Areas to be considered will be informational concepts, reading rate, comprehension and vocabulary and study techniques. Specific exercises will be based upon a thorough analysis of the individual student's needs. 3-5 Class Hrs.; 0 Credit Hrs.

25-71, 25-72, 25-73, 25-74 *Seminar in Psychology* — Discussion of current problems in Psychology. Topics will be introduced by members of the department and by guest lecturers. Required of Juniors and Seniors majoring in Psychology. 2 Class Hrs.; 1 Credit Hr.

Sociology

26-01 *Principles of Sociology* — A study of the basic factors in human social life; the roles of biology, geography and culture; factors contributing to personality development; the social phenomena of group life, crowds, publics, and social classes; the effects of cooperation, competition, and conflicts in society. 4 Class Hrs.; 4 Credit Hrs.

26-02 *Principles of Sociology* — A study of principles of social interaction as they operate in the community; human ecology; the growth and distribution of population; introduction to the concepts of social institutions with analysis of the operation of several major institutional fields; social change and the adjustment of man to culture. Prep. 26-01; 4 Class Hrs.; 4 Credit Hrs.

26-05 *Social Problems* — A survey course for engineers; the sources, effects, and treatment of social problems are analyzed with reference to the influence of science upon human experience in modern society. Problems related to economic factors, mental-emotional qualities, crimes, politics, social classes, and family are discussed. 3 Class Hrs.; 3 Credit Hrs.

26-07s *Sociology* — This is a brief course in the principles of sociology with special attention to the origins, forms, and forces of human associations. 5 Class Hrs.; 2½ Credit Hrs.

26-11 *Social Problems* — The course is introduced by a general classification of the sources of the problems of society. Interpretation is in terms of the organizational and disruptive potentialities in human capacities and experience in social interaction. Consideration is given to various approaches to social problems: the theological, the legal and the clinical and scientific. Several specific problems are analyzed. These include the problems of adolescence, delinquency and crime, sexual deviation, alcoholism, suicide, mental-emotional disorders and deficiencies and problems of the family. Prep. 26-02; 4 Class Hrs.; 4 Credit Hrs.

26-12 *Social Problems* — Social problems are considered in relation to the community: the small town; the metropolitan district; occupational problems; the influence of industrialization; leisure and recreation; social mobility; political problems on the local, national and international plane. Prep. 26-11; 4 Class Hrs.; 4 Credit Hrs.

26-13 *Social Ethics* — To clarify the meaning of morality in social relations is the aim of this study. Right and wrong conduct is analyzed in the light of the highest values for human society. Moral laws are discussed, and the various systems of ethics are evaluated. Scientific attitudes are encouraged in order that one's moral judgments may be compatible with one's best reflective thought. 4 Class Hrs.; 4 Credit Hrs.

26-14 *Social Ethics* — Problems arising from differences in moral standards found in the various social groups will be examined. The question of ethical relativism and determinism will be considered. A selected number of specific problems in social ethics will be discussed. 4 Class Hrs.; 4 Credit Hrs.

26-15 *The Family* — The historical development of the family is first traced, after which the course focuses upon the modern family. The monogamic family

is contrasted with other types, and such unconventional forms as companionate and trial marriages are evaluated. Then follows an intensive study of family problems. A constructive program is presented for strengthening the family as a basic unit. Prep. 26-02; 4 Class Hrs.; 4 Credit Hrs.

26-16 *Criminology* — Delinquency and crime are defined and classified, and their causal factors indicated. The various theories as to what makes criminals are dealt with, and a brief history of crime is sketched. Legal and economic aspects of crime are summarized, but the study is mainly sociological. Attention is paid to the prevention and correction of criminal behavior and to dealing with offenders. Local institutions are visited. Prep. 26-02; 4 Class Hrs.; 4 Credit Hrs.

26-17 *Urban Sociology* — Upon studying the complex human society found in the various cities of the world, this course then turns to an analysis of the modern American city. Its types, social values, and pathological elements are discussed. Methods of city planning are considered. The belief on the part of some sociologists that democracy is doomed by its cities is examined in the light of typical problems of urban society. Prep. 26-02; 4 Class Hrs.; 4 Credit Hrs.

26-18 *Social Progress* — The historical development of the theory of progress, contemporary concepts of social progress, the agents of progress, and the phenomenon of regression are several of the subjects for study. Prep. 26-12; 4 Class Hrs.; 4 Credit Hrs.

26-19 *Sociological Theory* — With emphasis upon modern authorities, this course surveys the chief systems of sociological thought and the personalities who have made outstanding contributions to the field. Such leading thinkers as Sumner, Ward, Gumpłowicz, Durkheim, and Pareto are studied. The relation of sociological theory to contemporary world movements is stressed. Prep. 26-12; 4 Class Hrs.; 4 Credit Hrs.

26-20 *American Social Thought* — Beginning with such early social philosophers as Thomas Jefferson and Thomas Paine, this course deals with the significant contributions to the stream of our national culture. The sociological concepts, forces, and institutions — which have produced what is commonly designated as the American way of life — are analyzed and evaluated. Prep. 26-12; 4 Class Hrs.; 4 Credit Hrs.

26-21 *Sociology of Religion* — Religious beliefs, practices, and institutions are examined and evaluated in relation to their effects upon society at large. The great religions of the world are compared in the light of their contributions to the well-being and progress of mankind. The social creeds of the several leading denominations of America are discussed with respect to their attitudes toward race, industry, war, and other social problems. The influences of organized religion upon politics and educational institutions are given attention. Prep. 26-02; 4 Class Hrs.; 4 Credit Hrs.

26-22 *Principles of Social Work* — This course is designed to prepare the student for part-time or full-time participation, either on a voluntary or professional basis, in any of the major social service agencies. Methods and techniques are studied, and the practical problems are discussed. Several representatives from the various agencies will give occasional lectures. Field trips are offered. Prep. 26-12; 4 Class Hrs.; 4 Credit Hrs.

26-24 *Social Control* — The methods by which social forces are controlled provide the fundamental material of the course. External and internal types of control of the social organism are discussed. The use of violence, the power of public opinion, and the application of certain principles of social psychology are examined. 4 Class Hrs.; 4 Credit Hrs.

26-25 *Social Institutions* — A study of institutionalized social order, its history and development including the emergence of distinct social institutions from early undifferentiated control systems; analysis of the major institutional fields — marriage, religion, economics, law, politics and education in terms of their functions and interrelations in the modern institutional complex. Prep. 26-02; 4 Class Hrs.; 4 Credit Hrs.

26-26 *Cultural Anthropology* — The evolution and development of man and his culture: the raw materials for society and the process of adaptation and adjustment through culture; the divergence, transmission and function of culture; primitive, historic and modern culture complexes compared; the relationship of anthropology to the other social sciences. Prep. 26-02; 4 Class Hrs.; 4 Credit Hrs.

26-61 *Seminar* — Assigned readings and reports on selected topics. May be elected with the consent of the department by qualified seniors majoring in sociology. 2 Class Hrs.; 1 Credit Hr.

26-62 *Seminar* — A continuation of 26-61. 2 Class Hrs.; 1 Credit Hr.

Fine Arts

27-01 *History of Ancient Art* — Beginning with a study of the materials and techniques employed by ancient artisans in architecture, sculpture and painting, this course includes a survey of prehistoric art and the arts of ancient Egypt, Mesopotamia, Crete, Greece and Rome. Lectures are illustrated with lantern slides and include brief historical accounts of each period under discussion. 4 Class Hrs.; 4 Credit Hrs.

27-02 *History of Early Christian and Medieval Art* — This course is a continuation of 27-01, History of Ancient Art, although the latter is not a prerequisite course. This course includes a study of Early Christian and Byzantine art, Romanesque and Gothic art, and an introduction to the art of the Early Italian Renaissance. 4 Class Hrs.; 4 Credit Hrs.

27-03 *History of Renaissance Art* — This course is a continuation of 27-02, History of Early Christian and Medieval Art, although the latter is not a prerequisite course. Beginning with a survey of Renaissance sculpture, the course then concentrates on a study of Italian Renaissance painting from Giotto to Raphael. Lectures are illustrated with drawings and lantern slides and include detailed discussions on the materials, techniques, design and composition employed by various artists. 4 Class Hrs.; 4 Credit Hrs.

27-04 *History of European Art* — A continuation of Course 27-03, this course begins with a survey of North Italian Renaissance art, and includes a study of the architecture, sculpture, and painting of European art up to the end of the nineteenth century. Emphasis is placed upon the contributions of Titian, Tintoretto,

Giorgione, Rembrandt, Raphael, Dürer, Gainsborough, Reynolds, and Turner. Lantern slides and museum visits supplement the lectures. 4 Class Hrs.; 4 Credit Hrs.

27-08 *History of American Art I* — A study of the history of American art from colonial times to about 1860. The object of this course is to acquaint the student with the rise and early history of architecture, sculpture, and painting in America. Lectures include discussion of techniques, styles, methods, and materials employed during the periods considered. Lantern slides and visits to local museums supplement the lectures. 4 Class Hrs.; 4 Credit Hrs.

27-09 *History of American Art II* — A continuation of Course 27-08, this course begins with the Civil War period and includes a study of American architecture, sculpture, and painting, up to the 20th century. Particular attention is given to the work of Inness, Homer, Eakins, Whistler, Ryder, Sargent, Bellows, Sloan, and their contemporaries. Lantern slides and visits to local museums augment the lecture material. 4 Class Hrs.; 4 Credit Hrs.

27-10 *Decorative Interior Art* — This course is designed to round out the study of art history in the United States. Beginning with a study of the decorative interior arts of colonial times, attention is directed toward the development and refinement of the arts up to and including contemporary times. Illustrated lectures are supplemented by studies in local museums. 4 Class Hrs.; 4 Credit Hrs.

27-11 *History of Civilization* — This course is designed to cultivate a knowledge and appreciation of the cultures of ancient times. Beginning with a study of the early world and prehistoric man, it includes a study of the ancient civilizations of Egypt, Sumer, Assyria, Chaldea, Phoenicia, Palestine and the Aegean World. 4 Class Hrs.; 4 Credit Hrs.

27-12 *History of Civilization* — This course is a continuation of 27-11, *History of Civilization*. Beginning with a study of the Indo-European migration and the Greek tribes, the course includes a comparative analysis of Persian and Greek cultures, the growth and development of the Greek states, Greek art, architecture, science and philosophy, the Hellenistic world, the rise of ancient Rome and the growth and cultural contributions of the Roman Empire. Prep. 27-11; 4 Class Hrs.; 3 Credit Hrs.

27-13 *History of Civilization* — This course is a continuation of 27-12, *History of Civilization*. It includes a study of the Roman Empire, Roman art and architecture, the organization and development of the Early Christian Church, Early Christian and Byzantine art and architecture, the Mohammedan World, the European Feudal Age, and the Christian Crusades. Prep. 27-12; 4 Class Hrs.; 4 Credit Hrs.

27-14 *History of Civilization* — This course is a continuation of 27-13, *History of Civilization*. Beginning with a study of the art of the Romanesque and Gothic periods, it includes a study of the rise of European nations, the Italian and European Renaissance periods, the Religious Revolt, and the Age of Discovery and Exploration. Prep. 27-13; 4 Class Hrs.; 4 Credit Hrs.

27-30 *Elementary Drawing and Lettering* — An introductory study of mechanical drawing and lettering, this course is designed to provide fundamental training

upon which other applied art courses may be built. The work of the course includes practice in the use of drawing instruments, Gothic, Roman, and Script lettering, elementary mechanical drawing problems, and tracings in ink. 2 Class Hrs.; 4 Lab. Hrs.; 4 Credit Hrs.

27-31 Pictorial Drawing — A continuation of Course 27-30 which is a prerequisite, this course includes studies in isometric drawing, oblique and cabinet drawing, and problems in mechanical perspective. The course concludes with some practical applications of each in the field of art and industry. 2 Class Hrs.; 4 Lab. Hrs.; 4 Credit Hrs.

27-32 Freehand Sketching — Beginning with an analysis of sketching instruments, materials, and techniques, this course includes studies of delineation, form drawing, and color value in still life, landscape, and portraiture. Problems include practice with lead pencil, charcoal, crayon, and chalk. 6 Lab. Hrs.; 4 Credit Hrs.

27-33 Theory of Color I — This course is designed to acquaint the student with the techniques and use of water color. Beginning with studies in color composition, it includes practice in tonal value, color intensities, hues, cast of reflected shadows and studies in still life by use of diagrams and drawings. 6 Lab. Hrs.; 4 Credit Hrs.

27-34 Theory of Color II — A continuation of Course 27-33 which is a prerequisite, the media of study in this course are water color, pastels, and oils. The work of the course includes discussion and practice of techniques in the studio, and training in the use of all three media for still life studies and landscape. 6 Lab. Hrs.; 4 Credit Hrs.

27-35 Oil Painting — A continuation of 27-34, this course concentrates on the modes and techniques of oil painting. The work of the course includes paintings of still life, landscape, and portraiture. Instructional discussions are augmented by classroom and studio demonstrations by professional artists, and by visits to local museums. 6 Lab. Hrs.; 4 Credit Hrs.

27-36 Graphic Arts I — This studio course is devoted to the study and practice of printing and printing processes. Beginning with lectures and illustrations of printing media and techniques, students practice elementary techniques in the studio beginning with woodblock carving, and continuing through etching, dry point, and engraving. 6 Lab. Hrs.; 4 Credit Hrs.

27-37 Graphic Arts II — An advanced course in Graphic Arts, this course is a continuation of Course 27-36, the latter being a prerequisite. Studio work concentrates on advanced engraving, lithography, tinting processes in printing, and completion of special work projects under the guidance and direction of the instructor. 6 Lab. Hrs.; 4 Credit Hrs.

27-38 Design for Industry — This studio course concentrates on decorative designs and their application to ceramics, glass, furniture, textiles, paper, or metal products. Beginning with studies of decorative designs and patterns, students apply techniques they have learned to work projects of their own choosing. An analysis of the production processes involved in manufacture completes the work of the course. 6 Lab. Hrs.; 4 Credit Hrs.

27-39 *Design for Advertising* — This course makes use of previous training in the applied art courses listed above including drawing, sketching, lettering, design, composition, coloring, and the use of the various instruments used in rendering. Studio instruction includes the use of the air brush, and work projects are guided by instruction in the basic requirements of display advertising. 6 Lab. Hrs.; 4 Credit Hrs.

Music

28-01 *Music Appreciation* — The principal concern of this course is teaching the student a technique for listening to music creatively. Representative works from the standard repertory are analyzed with emphasis on listening to music actively. 4 Class Hrs.; 4 Credit Hrs.

28-02 *Introduction to Music History* — This course deals with the major developments in music history from Gregorian Chant through the Romantic period. Emphasis is placed on the comparison of the various styles of each century. 4 Class Hrs.; 4 Credit Hrs.

28-03 *Music Fundamentals* — Basic facts concerning tone relationships, music notation, and elementary chord structure are the subject matter of this course. Class sessions are devoted to sight-singing and ear training. 4 Class Hrs. 4 Credit Hrs.

28-04 *Musical Forms* — The more common musical forms such as the sonata, theme and variations and rondo are discussed and analyzed. Examples from the standard repertory are played in class and assigned as outside listening. Emphasis is placed on hearing the formal structure of the composition. Prep. 28-01 or 28-02; 4 Class Hrs.; 4 Credit Hrs.

28-05 *The Classical Symphony* — Structural development of the symphonic form during the classical period is emphasized. The most significant symphonies of Haydn, Mozart and Beethoven are used as the basis for discussion. Prep. 28-01, 28-02, 28-03; 4 Class Hrs.; 4 Credit Hrs.

English

30-01 *English I* — A review of basic sentence structure and the grammatical functions of clauses and phrases, followed by a study of effective sentence writing, paragraph development, and reading techniques. Theme assignments are planned to develop practical skill in each of the phases studied. 3 Class Hrs.; 3 Credit Hrs.

30-02 *English I* — A study of the structure and organization of written compositions: outlining, development of compositions by phases, and the analysis of expository writings. Experimental work in each phase is carried out by means of theme assignments and readings. Prep. 30-01; 3 Class Hrs.; 3 Credit Hrs.

30-03 *English I* — A study of the problems peculiar to each of the four main types of discourse: exposition, description, narrative, and argument. Theme work includes, in addition to these basic types, some assignments in the framing of reports and the writing of business letters. Prep. 30-02; 3 Class Hrs.; 3 Credit Hrs.

30-04 *Introduction to Literature* — A study of the aims and techniques of various common types of literature: the play, the short story, lyrical and narrative poetry, and the literary essay. Instructional methods include assigned reading and writing of short critical reports. 5 Class Hrs.; 2½ Credit Hrs.

30-05 *Public Speaking* — The study and practice of the basic principles and techniques of effective modern speaking. The class is organized as a functional group. Emphasis is on conversational delivery and clear, concise composition. Group procedures, impromptu speaking, and the handling of short expository forms are practiced. The course trains for the communication requirements of everyday business, professional, and social life. 4 Class Hrs.; 4 Credit Hrs.

30-06 *Public Speaking* — A continuation of 30-05 with emphasis upon speech patterns which involve effective discussion, the study of fundamental issues, analysis, evidence, and reasoning as factors in convincing and persuading people. Prep. 30-05; 4 Class Hrs.; 4 Credit Hrs.

30-07 *Effective Speaking* — A short practical course designed for engineers. The fundamentals of speaking, conferring and reporting are studied and practiced. The class is organized as a functional group with offices and agenda. Theory is minimized; practice emphasized. 3 Class Hrs.; 3 Credit Hrs.

30-07B *Conference Leadership* — A course designed to study, observe, and practice the basic principles, procedures, and skills involved in planning, managing, and leading conferences. The class is organized as a business conference. Theory is subordinated to participation in the important conference types involved in modern business. 8 Class Hrs.; 2½ Credit Hrs.

30-09 *Report Writing* — The study and practice of the principles and skills involved in planning, writing, and delivering modern reports. Six basic report patterns are studied and demonstrated. The classroom is used as a workshop: all reports are prepared during class sessions. Achievement of purpose, format, organization, content, style, and documentation are principal targets of achievement. 3 Class Hrs.; 3 Credit Hrs.

30-10 *Problems in Writing* — A course in the clear, accurate, and effective presentation of factual data, opinions, policies, and judgments. Emphasis is laid on sound organization, completeness of data, and pointed expression. 3 Class Hrs.; 3 Credit Hrs.

30-17 *Literature* — A course consisting of a careful study of four of Shakespeare's plays: *Henry the Fourth*, Part I; *Romeo and Juliet*; *The Tempest*; and *Othello*. The purpose of the course is twofold: to awaken an interest in and an appreciation of literature, and to develop in the student effective reading habits which will be serviceable to him in any reading he may do hereafter. 3 Class Hrs.; 3 Credit Hrs.

30-18 *Literature* — A course which parallels 30-17 in purpose and method, treats four nineteenth century American novels and develops in students the ability to judge whether the author has been accurate in observation, skillful in expression, and sound in ethical implication. 3 Class Hrs.; 3 Credit Hrs.

30-21 *Intermediate Writing* — A practice course in the writing of the shorter forms of composition. Each student will be given considerable latitude in writing

in the field of his individual interest. Student manuscripts will be read and analyzed in class. 4 Class Hrs.; 4 Credit Hrs.

30-22 *Intermediate Writing* — A continuation of 30-21. Approximately a quarter of the work assigned consists of preliminary analysis and completion of a short story for each student on a given conflict problem. Prep. 30-21; 4 Class Hrs.; 4 Credit Hrs.

30-23 *Advanced Composition* — A course designed to meet the needs of advanced students who are interested in literary composition and who have proved their ability in 30-22, *Intermediate Writing*. 4 Class Hrs.; 4 Credit Hrs.

30-24 *Advanced Composition* — A continuation of 30-23. As in the previous course, class instruction will be supplemented by individual conferences with the instructor. Special attention will be given to the preparation of manuscripts for publication. 4 Class Hrs.; 4 Credit Hrs.

30-27 *Masters of the Drama* — A consideration of the world's outstanding dramatists from Aeschylus to Moliere — their mastery of dramatic techniques, their contribution to the development of the theatre, their influence on their contemporaries, their significance today. Students will be asked to read about fifteen plays, all of them in English. 4 Class Hrs.; 4 Credit Hrs.

30-28 *Masters of the Drama* — A continuation of 30-27. Among the dramatists covered in this course are Congreve, Sheridan, Goethe, Ibsen, Maeterlinck, Strindberg, Hauptmann, Chekhov, Gorky, Pirandello, Shaw, and O'Neill. 4 Class Hrs.; 4 Credit Hrs.

30-29 *Foundations of the English Language* — Ancient and prehistoric origins of the English language. The development of English from and alongside other languages, with some references to Sanskrit, but with special attention to the contributions of Anglo-Saxon and Greek; cognates and derivatives. Application of some of the principles of linguistic science, including phonetics and phonology, to an understanding of many of the phenomena of change in English words. (Previous training in Greek, Latin, French, and German helpful, but not required.) 4 Class Hrs.; 4 Credit Hrs.

30-30 *Foundations of the English Language* — A continued treatment of the principles involved in 30-29, with the addition of Latin in its bearing upon English, and with considerable attention to the influence of accent. An examination of English in its larger elements, and of the informative and symbolic uses of it, with some of the implications of semantics. (Previous training in Greek, Latin, French, helpful but not required.) Prep. 30-29; 4 Class Hrs.; 4 Credit Hrs.

30-31 *Western World Literature* — A survey of the principal writings of the classic period, including the principal Greek and Latin authors from Homer to Lucian, and passages from the Bible. Attention is given to literary force, content, and historical setting. 4 Class Hrs.; 4 Credit Hrs.

30-32 *Western World Literature* — A continuation of 30-31. Included in the readings are literary masterpieces of England, France, Germany, Norway, Spain, Italy, and Russia. 4 Class Hrs.; 4 Credit Hrs.

30-33 *Survey of English Literature* — A survey of English literature to 1800. After a brief study of the social and political background of each literary period,

the writing of the period is considered, and the more important writers are studied and read in detail. The purpose of the course is to give the student an appreciation of English literature as a whole, and an intimate knowledge of its major figures. 4 Class Hrs.; 4 Credit Hrs.

30-34 *Survey of English Literature* — A survey of English literature from 1800 to the present century. The outstanding writers are read, studied, and related to the general background of nineteenth century England. The purpose of the course is to give the student an understanding of the writers who contributed most to the formation and development of modern literature in England. 4 Class Hrs.; 4 Credit Hrs.

30-35 *American Literature to 1860* — A survey of American literature from colonial times to the triumph of the transcendental movement in New England. The work of Bryant, Irving, Cooper, Poe, Emerson, Thoreau, Lowell, Holmes, Longfellow, and Melville will be emphasized. 4 Class Hrs.; 4 Credit Hrs.

30-36 *American Literature after 1860* — Continuing 30-35, the course will consider the rise of realism after the Civil War, the development of American humor, the appearance of local color writers, and modern trends since 1900. Prep. 30-35; 4 Class Hrs.; 4 Credit Hrs.

30-39 *The Seventeenth Century in England* — An historical survey of the literary developments during the first half of the seventeenth century. Assigned readings in drama, lyrical poetry, and criticism are supplemented by lectures on general trends and minor authors not represented in the readings. 4 Class Hrs.; 4 Credit Hrs.

30-40 *The Seventeenth Century in England* — A continuation of 30-39 with special attention to the later works of Milton, the poetry of Dryden, and the theatre of the Restoration. Prep. 30-39; 4 Class Hrs.; 4 Credit Hrs.

30-41 *The Eighteenth Century in England* — An historical survey of the literary developments during the first half of the eighteenth century: the rise of popular journalism; the sentimental comedy; satire and realistic narrative; the beginnings of the novel. 4 Class Hrs.; 4 Credit Hrs.

30-42 *The Eighteenth Century in England* — A continuation of 30-41: the age of Johnson; late eighteenth century poets, novelists, and dramatists. Prep. 30-41; 4 Class Hrs.; 4 Credit Hrs.

30-43 *Nineteenth Century Prose* — An examination of significant prose writers of the early nineteenth century in England and their relation to the social, political, and literary currents of the time, with consideration of background figures like Godwin and Cobbett, the establishment of the great quarterlies and the literary magazines, the Romantic critics and essayists, Coleridge, Lamb, Hazlitt, and DeQuincey, and such transitional writers as Carlyle and Macaulay. 4 Class Hrs.; 4 Credit Hrs.

30-44 *Nineteenth Century Prose* — A continuation of 30-43. Examination of the major prose writers of Victorian England in the work of Thackeray, Newman, Ruskin, Arnold, Huxley, Pater, and Stevenson. 4 Class Hrs.; 4 Credit Hrs.

30-45 *Nineteenth Century Poetry* — A study of Romanticism, its origins, its conflict with classicism, and its contributions to contemporary and later culture. The poetry of Wordsworth, Coleridge, Byron, Shelley, and Keats will be examined appreciatively and critically. 4 Class Hrs.; 4 Credit Hrs.

30-46 *Nineteenth Century Poetry* — A study of the Victorian era with emphasis on Browning and Tennyson as artists and as interpreters of life. Lesser poets to be considered include Arnold, Clough, and the Pre-Raphaelites. 4 Class Hrs.; 4 Credit Hrs.

30-47 *The Modern Novel* — A survey of the modern and contemporary English and American novel, with emphasis on trends and changes in content and technique. Representative novels are read, and a few novelists are studied in detail. 4 Class Hrs.; 4 Credit Hrs.

30-48 *The Modern Drama* — A survey of English and American drama since 1900, considering representative plays and major dramatists and tracing the relationship between drama and history in the twentieth century. 4 Class Hrs.; 4 Credit Hrs.

30-49 *Modern Poetry* — A survey of the principal developments in the prosody, substance, and theory of poetry in England and America since 1912. The chief emphasis of the course will be on the work of the major poets of the period. 4 Class Hrs.; 4 Credit Hrs.

30-51 *Introduction to Journalism* — This course treats the functions of the editorial department and the general tasks of an "inside" man. The student is given extensive practice in the rewriting of news stories. 4 Class Hrs.; 4 Credit Hrs.

30-52 *Introduction to Journalism* — The problems of reporting and news-writing, with written assignments in all types of spot news reporting. Prep. 30-51; 4 Class Hrs.; 4 Credit Hrs.

30-53 *Techniques of Journalism* — Editing the news. The writing of editorials, feature articles, and columns. Prep. 30-52; 4 Class Hrs.; 4 Credit Hrs.

30-54 *Techniques of Journalism* — A general practice course in newspaper writing, the covering of special assignments, and editorial problems. Prep. 30-53; 4 Class Hrs.; 4 Credit Hrs.

30-55 *Vocabulary Building* — This course is concerned mainly with the Greek, Latin, and Germanic elements from which modern English words are made. It includes also some work in the history of the language and types of semantic change. 3 Class Hrs.; 3 Credit Hrs.

30-61 *Shakespeare* — The Elizabethan period, sixteenth century London, and Shakespearean stage and audience, and the actors' companies will be discussed. Shakespeare's life and his development as a dramatist will be carefully considered. Five plays will be intensively studied. 4 Class Hrs.; 4 Credit Hrs.

30-62 *Shakespeare* — Lectures will be given on Shakespeare's language, the text of the plays, Shakespearean criticism, editors' problems, etc. Four plays will

be intensively studied. The sonnets will be read and discussed. Prep. 30-61; 4 Class Hrs.; 4 Credit Hrs.

30-63 *Chaucer* — A study of the *Canterbury Tales*, with careful attention to Middle English vocabulary, historical setting, and the rhythms and devices of Chaucer's poetry. Included in the readings are the General Prologue and seven Tales, with links and prologues. 4 Class Hrs.; 4 Credit Hrs.

30-64 *Chaucer* — This course is principally concerned with *Troilus and Criseyde*, *The House of Fame*, *The Parliament of Fowls* and certain selected parts of *Boece*. Prep. 30-63; 4 Class Hrs.; 4 Credit Hrs.

French

31-01 *Elementary French* — A beginner's course stressing the essentials of grammar, practice in pronunciation, and progressive acquisition of a basic vocabulary and idiomatic expressions. 3 Class Hrs.; 3 Credit Hrs.

31-02 *Elementary French* — A continuation of 31-01, with emphasis on the more difficult points of grammar, particularly the uses of the subjunctive mood. Prep. 31-01; 3 Class Hrs.; 3 Credit Hrs.

31-03 *Elementary French* — A continuation of 31-02. Reading of simple French prose, with written and oral exercises based on the material read. French conversation is encouraged whenever feasible. Prep. 31-02; 3 Class Hrs.; 3 Credit Hrs.

31-04 *Elementary French* — A continuation of 31-03. Reading of French prose of moderate difficulty, with practice in conversation. Prep. 31-03; 3 Class Hrs.; 1½ Credit Hrs.

31-15 *Intermediate French* — In this course texts of average difficulty are read. The work includes review of grammar, oral and written exercises, dictation and memorization of idioms. Prep. 31-04; 4 Class Hrs.; 4 Credit Hrs.

31-16 *Intermediate French* — A continuation of 31-15. Intensive reading of modern prose, with emphasis on the acquisition of a reading knowledge. Some conversational practice is included. Prep. 31-15; 4 Class Hrs.; 4 Credit Hrs.

31-17 *French Composition and Conversation* — Although some written work is required, this course aims primarily to develop the ability to engage in French conversation. Work with phonograph records and discussion of current events. Prep. 31-16; 5 Class Hrs.; 2½ Credit Hrs.

31-19 *Readings from Contemporary French* — In this course selected passages are read from the narrative and dramatic prose of the last fifty years. Among the writers included are Colette, Duhamel, Renard, Rolland, Vildrac, Anatole France, Gide, Proust, Romain and Sartre. Prep. 31-16; 5 Class Hrs.; 2½ Credit Hrs.

31-21 *French Literature from 1850 to 1900* — A study of the novel, especially of Flaubert, Zola, Daudet, Loti and Huysmans. Selections are read also from Sainte-Beuve, Taine and Renan. Lectures, collateral reading and reports. Prep. 31-16; 4 Class Hrs.; 4 Credit Hrs.

31-22 *French Literature from 1850 to 1900* — A continuation of 31-21. A study of the lyric poetry of the Parnassian and Symbolist schools, with selections from Gautier, Banville, Leconte de Lisle, Hérédia, Sully-Prudhomme, Baudelaire, Verlaine, Mallarmé and Rimbeau. Plays of the period are assigned for outside reading. Lectures and reports. Prep. 31-16; 4 Class Hrs.; 4 Credit Hrs.

31-23 *French Classicism* — A study of the background and non-dramatic literature of the seventeenth century. The selections read are mainly from Malherbe, Descartes, Pascal, La Fontaine, Mme. de Sévigné, Mme. de La Fayette, Bossuet, and Fenelon. Lectures, collateral reading and reports. Prep. 31-16; 4 Class Hrs.; 4 Credit Hrs.

31-24 *French Classicism* — A continuation of 31-23. After an examination of the dramatic theories as expounded especially by Boileau, this course is devoted to the study of the plays of Corneille, Molière, and Racine. Lectures, collateral reading. Prep. 31-16; 4 Class Hrs.; 4 Credit Hrs.

31-25 *French Romanticism* — A study of the origins and development of the Romantic movement in France. Selected poems by Lamartine, Hugo, Musset and Vigny are read and discussed in class, while characteristic Romantic prose is assigned for outside reading. Lectures and reports. Prep. 31-16; 4 Class Hrs.; 4 Credit Hrs.

31-26 *French Romanticism* — A continuation of 31-25. After an examination of the dramatic theories expounded in the *Preface de Cromwell*, this course is devoted to the study of Romantic dramas. Lectures, collateral reading and reports. Prep. 31-16; 4 Class Hrs.; 4 Credit Hrs.

31-31 *Advanced French Composition* — The work in this course consists of the study of difficult points of grammar and the acquisition of an idiomatic French style. Careful analysis of French prose passages and translation exercises from English into French. Prep. 31-16; 4 Class Hrs.; 4 Credit Hrs.

31-32 *Advanced French Composition and Conversation* — A continuation of 31-31, with emphasis on free composition, both written and oral. Weekly themes and oral reports serve as bases for class discussions. Prep. 31-31; 4 Class Hrs.; 4 Credit Hrs.

German

32-01 *Elementary German* — A beginner's course stressing the essentials of grammar, practice in pronunciation, and the acquisition of a basic vocabulary and idiomatic expressions. 3 Class Hrs.; 3 Credit Hrs.

32-02 *Elementary German* — A continuation of 32-01, with emphasis on the more difficult points of grammar, particularly the uses of the subjunctive mood. Prep. 32-01; 3 Class Hrs.; 3 Credit Hrs.

32-03 *Elementary German* — A continuation of 32-02. Reading of simple German prose, with oral and written exercises based on the material read. German conversation is encouraged whenever feasible. Prep. 32-02; 3 Class Hrs.; 3 Credit Hrs.

32-04 *Elementary German* — A continuation of 32-03. Reading of German prose of moderate difficulty, with practice in conversation. Prep. 32-03; 3 Class Hrs.; 1½ Credit Hrs.

32-15 *Intermediate German* — In this course texts of average difficulty are read. The work includes review of grammar, oral and written exercises, dictation and memorization of idioms. Prep. 32-04; 4 Class Hrs.; 4 Credit Hrs.

32-16 *Intermediate German* — A continuation of 32-15. Intensive reading of modern prose, with emphasis on the acquisition of a reading knowledge. Some conversational practice is included. Prep. 32-15; 4 Class Hrs.; 4 Credit Hrs.

32-17 *German Composition and Conversation* — Although some written work is required, this course aims primarily to develop the ability to engage in German conversation. Work with phonograph records and discussion of current events. Prep. 32-16; 5 Class Hrs.; 2½ Credit Hrs.

32-19 *Scientific German* — The purpose of this course is to provide students with a reading knowledge of scientific German. Articles dealing with chemistry, physics, mathematics and biology are read. Prep. 32-16; 5 Class Hrs.; 2½ Credit Hrs.

32-21 *Modern German Literature* — A survey of the main currents of German literature since 1880. The course deals chiefly with the novel and short story of the leading authors of the period. Lectures, collateral reading and reports. Prep. 32-16; 4 Class Hrs.; 4 Credit Hrs.

32-22 *Modern German Literature* — A continuation of 32-21, with the main emphasis on the drama and poetry. Representative selections from the Naturalistic, Impressionistic, and Expressionistic movements are read. Lectures, collateral reading and reports. Prep. 32-16; 4 Class Hrs.; 4 Credit Hrs.

32-23 *The Classical Period of German Literature* — This course traces the development of German literature during the second half of the eighteenth century, dealing especially with the works of Lessing and Schiller. The Storm and Stress period also receives attention. Lectures, collateral reading and reports. Prep. 32-16; 4 Class Hrs.; 4 Credit Hrs.

32-24 *The Classical Period of German Literature* — A continuation of 32-23, this course is devoted to the life and works of Goethe, with emphasis on his lyric and dramatic poetry. Lectures, collateral reading and reports. Prep. 32-16; 4 Class Hrs.; 4 Credit Hrs.

32-25 *German Literature of the Nineteenth Century* — This course traces the chief tendencies in German literature from the beginning of Romanticism to the coming of Naturalism. Representative prose works of the principal writers of the period are read. Lectures, collateral reading and reports. Prep. 32-16; 4 Class Hrs.; 4 Credit Hrs.

32-26 *German Literature of the Nineteenth Century* — A continuation of 32-25, stressing the drama and poetry of the period. The selections read are mainly from Kleist, Hölderlin, Eichendorff, Novalis, Heine, and Hebbel. Lectures, collateral reading and reports. Prep. 32-16; 4 Class Hrs.; 4 Credit Hrs.

32-31 *Advanced German Composition* — The work in this course consists of the study of difficult points of grammar and the acquisition of an idiomatic German style. Careful analysis of German prose passages and translation exercises from English into German. Prep. 32-16; 4 Class Hrs.; 4 Credit Hrs.

32-32 *Advanced German Composition and Conversation* — A continuation of 32-31, with emphasis on free composition, both written and oral. Weekly themes and oral reports serve as bases for class discussions. Prep. 32-31; 4 Class Hrs.; 4 Credit Hrs.

Spanish

33-01 *Elementary Spanish* — A beginner's course stressing the essentials of grammar, practice in pronunciation and progressive acquisition of basic vocabulary and idiomatic expressions. 3 Class Hrs.; 3 Credit Hrs.

33-02 *Elementary Spanish* — A continuation of 33-01, with emphasis on the more difficult points of grammar, particularly the uses of the subjunctive mood. Prep. 33-01; 3 Class Hrs.; 3 Credit Hrs.

33-03 *Elementary Spanish* — A continuation of 33-02. Reading of simple Spanish prose, with written and oral exercises based on the material read. Spanish conversation is encouraged whenever feasible. Prep. 33-02; 3 Class Hrs.; 3 Credit Hrs.

33-04 *Elementary Spanish* — Reading of Spanish prose of moderate difficulty, with practice in conversation. Prep. 33-03; 3 Class Hrs.; 1½ Credit Hrs.

33-15 *Intermediate Spanish* — In this course texts of average difficulty are read. The work includes review of grammar, oral and written exercises, dictation and memorization of idioms. Prep. 33-04; 4 Class Hrs.; 4 Credit Hrs.

33-16 *Intermediate Spanish* — A continuation of 33-15. Intensive reading of modern prose, with emphasis on the acquisition of a reading knowledge. Some conversational practice is included. Prep. 33-15; 4 Class Hrs.; 4 Credit Hrs.

33-17 *Spanish Composition and Conversation* — Although some written work is required, this course aims primarily to develop the ability to engage in Spanish conversation. Work with phonograph records and discussion of current events. Prep. 33-16; 5 Class Hrs.; 2½ Credit Hrs.

33-19 *Readings from Contemporary Spanish* — In this course selected passages are read from the narrative and dramatic prose of the last fifty years. Among the writers included are Unamuno, "Azorín," Benavente, Ibáñez, Baroja, Balle-Inclán, Ayala, and Ortega y Hasset. Prep. 33-16; 5 Class Hrs.; 2½ Credit Hrs.

33-21 *Spanish Literature of the Golden Age* — This course deals with works of Cervantes, particularly the *Don Quixote* and the *Novelas Ejemplares*. Lectures, collateral reading and reports. Prep. 33-16; 4 Class Hrs.; 4 Credit Hrs.

33-22 *Spanish Literature of the Golden Age* — A continuation of 33-21, with emphasis on the drama of Lope de Vega, Tirso de Molina and Calderón. Lectures, collateral reading and reports. Prep. 33-16; 4 Class Hrs.; 4 Credit Hrs.

33-23 *Spanish Literature of the Nineteenth Century* — A study of the literature of Spain during the first half of the nineteenth century, with emphasis on the Romantic drama and poetry. Lectures, collateral reading and reports. Prep. 33-16; 4 Class Hrs.; 4 Credit Hrs.

33-24 *Spanish Literature of the Nineteenth Century* — A continuation of 32-23, this course is devoted to Spanish literature of the second half of the nineteenth century, particularly to the Realistic novel. Lectures, collateral reading and reports. Prep. 33-16; 4 Class Hrs.; 4 Credit Hrs.

33-25 *Spanish American Literature* — A survey of the general trends of Spanish American literature, with particular attention to the colonial period, the period of the struggle for independence, and the nineteenth century epic of the Gaucho and the Indian. Lectures, collateral reading and reports. Prep. 33-16; 4 Class Hrs.; 4 Credit Hrs.

33-26 *Spanish American Literature* — A continuation of 33-25, this course deals with the better known Spanish American writers of the Modernistic, Realistic and Contemporary periods, with emphasis on Rubén Darío and Gabriela Mistral. Lectures, collateral reading and reports. Prep. 33-16; 4 Class Hrs.; 4 Credit Hrs.

33-31 *Advanced Spanish Composition* — The work in this course consists of the study of difficult points of grammar and the acquisition of an idiomatic Spanish style. Careful analysis of Spanish prose passages and translation exercises from English into Spanish. Prep. 33-16; 4 Class Hrs.; 4 Credit Hrs.

33-32 *Advanced Spanish Composition and Conversation* — A continuation of 33-31, with emphasis on free composition, both written and oral. Weekly themes and oral reports serve as bases for class discussion. Prep. 33-31; 4 Class Hrs.; 4 Credit Hrs.

Accounting

41-01 *Principles of Accounting* — The purpose of this course is to offer training in the understanding of the principles and practice of elementary accounting. It is designed to serve the needs of those who intend to specialize in accounting as well as those who are studying it as a tool subject. The student is acquainted with the entire cycle of bookkeeping procedure: journalizing, posting, taking a trial balance, preparing working papers and statements, and closing the books, as well as the analysis of transactions. 4 Class Hrs.; 4 Credit Hrs.

41-02 *Principles of Accounting* — This course continues the work in 41-01 with a complete treatment of the analysis of transactions, after which attention is directed to the more formal forms of the recording process. The course takes up the use of special journals and ledgers, controlling accounts, accrued and deferred items, valuation reserves for bad debts and depreciation, and the accounting for negotiable instruments. Prep. 41-01; 4 Class Hrs.; 4 Credit Hrs.

41-03 *Principles of Accounting* — This course continues the work of 41-02 with a discussion of the voucher system and matters related to payrolls. Then follows

an introductory treatment of the accounting features peculiar to the individual proprietorship, the partnership and the corporation, with emphasis on the concept of net worth or capital. Prep. 41-02; 4 Class Hrs.; 4 Credit Hrs.

41-07 Theory of Accounts — This course introduces the fundamental accounting principles of the theory of debits and credits, journalizing and posting to accounts, and preparation of financial statements. The construction and interpretation of accounts is considered. 4 Class Hrs.; 4 Credit Hrs.

41-08 Elements of Cost Accounting — This course includes a specialized application of the fundamental accounting principles covered in 41-07 for the purpose of providing data for the management and administration of a business. Principles used in calculating and interpreting the cost of producing articles manufactured or of performing the services rendered are brought to the attention of the student. Prep. 41-07; 2 Class Hrs.; 2 Lab. Hrs.; 3 Credit Hrs.

41-09 Elements of Cost Accounting — This course is a continuation of 41-08. The basic principles of the cost of production having been introduced to the student through a study of job, process, and standard cost systems. 41-09 concerns distribution costs, namely, the outlays incurred in storing the finished product and shipping it or transporting it to the customers. Cost reports, summaries and control are considered. Prep. 41-08; 2 Class Hrs.; 2 Lab. Hrs.; 3 Credit Hrs.

41-10 Principles of Accounting — This course is offered to those students who are entering the College of Business Administration at the sophomore level. The purpose of the course is to present the fundamental principles of accounting theory and practice in sufficient detail and scope to provide adequate foundation for either advanced study in accounting or the accounting phases in the study of industrial relations, management and marketing. 10 Class Hrs.; 10 Credit Hrs.

41-25 Principles of Accounting — This course continues the development of the fundamental principles of accounting. It introduces the student to the accounting for bonds and manufacturing accounts, followed by an introductory discussion of some of the balance sheet items. A comprehensive review of elementary accounting principles and techniques is provided through the use of a practice set of a manufacturing corporation. Prep. 41-03; 4 Class Hrs.; 4 Credit Hrs.

41-26 Intermediate Accounting — This course is a continuation of 41-25 with emphasis shifting from the achievement of technical facility into the analytical, interpretive, and managerial aspects of accounting. Emphasis is placed on the logical development of accounting rules and principles from fundamental accounting theory. The course coverage includes a comprehensive discussion of the theory and the analysis of accounting statements, the analysis of working capital, profit and loss analysis, and miscellaneous ratios. Prep. 41-25; 4 Class Hrs.; 4 Credit Hrs.

41-27 Accounting Statements — This course is a survey of the basic accounting statements. The five areas that are covered are as follows: (1) an explanation of the form, content, and general principles governing the construction of financial statements; (2) a study of accounting valuation and income determination prob-

lems; (3) an extensive examination of working capital; (4) a detailed coverage of comparative statements including trend percentages and common-size statements; and, (5) a complete study of all the standard ratios followed by the methods and techniques of using them in analyzing and interpreting financial and operating data. Prep. 41-25; 4 Class Hrs.; 4 Credit Hrs.

41-30 *Financial Statements* — The purpose of this course is to develop sound principles for an analysis and interpretation of the financial statements of a business enterprise. Such topics as the part played by financial statements in modern business, the construction of statements, analysis and interpretation of statements are considered. Basic methods and devices used by the analyst are studied. No attempt is made at specialization in any industries. Prep. 41-22; 2 Class Hrs.; 2 Lab. Hrs.; 3 Credit Hrs.

41-31 *Cost Accounting* — This course is essentially for students majoring in the field of accounting. At the outset, the course presents basic cost accounting terminology. This is followed by the job-order cost accounting cycle which shows the flow of costs through the general ledger. The following topics are then covered: the voucher, register, special ledgers, materials inventory control, accounting for labor, manufacturing expenses and their departmentalization, cost summaries and financial statements. Prep. 41-24; 6 Class Hrs.; 6 Credit Hrs.

41-32 *Cost Accounting* — This course is a continuation of 41-31. Here the following fields of cost accounting are covered: process costs, estimated cost accounting, and standard cost accounting. In the latter part of the course C.P.A. problems are presented. Prep. 41-31; 6 Class Hrs.; 6 Credit Hrs.

41-33 *Cost Accounting for Management* — Today, cost accounting, in addition to furnishing historical data, is an aid to management in cost control and cost analysis. In this course the student is mainly concerned with cost accounting as a tool of management. This course is designed to develop in the student the managerial ability to control production, operating, and distribution costs through use of cost accounting and the budget. Methods of costing and controlling materials, labor, and overhead are considered. Basic principles and cost analysis of the following fields are presented: job-order, process and standard cost. Prep. 41-22; 10 Class Hrs.; 5 Credit Hrs.

41-37 *Intermediate Accounting* — This course in Intermediate Accounting is designed to serve as a foundation for advanced accounting work. This calls for a broad and thorough understanding of basic accounting theory and its general application to business. The course begins with a series of studies describing in detail the accounting problems relating to valuation and presentation of corporate property, liability and equity items, as well as the related problems of measurement of cost and revenue. Prep. 41-26; 2 Class Hrs.; 2 Lab. Hrs.; 3 Credit Hrs.

41-38 *Intermediate Accounting* — This course is a continuation of 41-37. Here fundamental theory receives extended application. The purpose of this course is to broaden the base of the student's knowledge of subjects which are in a transitional and controversial stage. Both sides of controversial subjects are presented

and frequent reference is made to the expressed opinions of the American Institute of Accountants, the American Accounting Association, and the Securities and Exchange Commission. Prep. 41-37; 2 Class Hrs.; 2 Lab. Hrs.; 3 Credit Hrs.

41-42S Budget Procedure — The purpose of this course is to give consideration to the basic principles and procedures to be applied in preparing budgets. Among the various types of budgets developed are the sales, production, purchase, materials, labor, and expense. Prep. 41-33; 5 Class Hrs.; 2½ Credit Hrs.

41-43 Auditing — This is a course in auditing practice and procedure designed to give the student a practical knowledge of auditing. The course stresses the application of accounting and auditing principles in the verification, analysis and interpretation of the records and the compilation of reports by which management can base plans for future operations. Specifically, a large practice case is used to acquaint the student with actual audit work, work sheet preparation, and the preparation of the report. Prep. 41-36; 2 Class Hrs.; 2 Lab. Hrs.; 3 Credit Hrs.

41-44 Auditing — This course continues the work started in 41-43. The Accounting Research Bulletins and Statements on Auditing Procedure issued by the Committee on Accounting Procedure of the American Institute of Accountants are studied and discussed. The recommendations of the American Institute of Accountants, the American Accounting Association, the Federal Reserve Board, the Federal Trade Commission, the Securities and Exchange Commission, the New York Stock Exchange and business in general are recognized because of the marked influence of these agencies on accounting and auditing principles in the development of uniform auditing procedure. Prep. 41-43; 2 Class Hrs.; 2 Lab. Hrs.; 3 Credit Hrs.

41-45 Advanced Accounting A — This course is a continuation of 41-38. Here fundamental theory receives extended application to certain special areas of accounting. The topics covered are partnerships, consignments, venture accounts, installment sales, and insurance. The analytical and interpretive aspects of accounting are stressed and developed. Prep. 41-38; 2 Class Hrs.; 2 Lab. Hrs.; 3 Credit Hrs.

41-46 Advanced Accounting B — The purpose of this course is to provide for the application of the knowledge of accounting principles and practices gained in the preceding courses to the analysis and solution of complex problems involving a recognition of the economic, legal and social aspects of various forms of business organizations. The course content consists chiefly of all phases of home and branch accounting, foreign exchange and consolidations. Prep. 41-38; 2 Class Hrs.; 2 Lab. Hrs.; 3 Credit Hrs.

41-47 Advanced Accounting C — This course is a continuation of 41-46. The course content consists chiefly of problems and discussion of principles. The remaining phases of consolidations and all phases of budgeting will be covered. Prep. 41-46; 2 Class Hrs.; 2 Lab. Hrs.; 3 Credit Hrs.

41-50 Fiduciary Accounting — This course is a continuation of 41-47. The entire field of insolvency and probate work is carefully studied. The topics covered are

the statement of affairs, receiver's affairs, realization and liquidation report, and estates and trusts. Prep. 41-47; 2 Class Hrs.; 2 Lab. Hrs.; 3 Credit Hrs.

41-51 *System Building* — The purpose of this course is to provide for the application of the knowledge of accounting principles and practices gained in the preceding courses to the development and installation of a set of accounting records. The course content will be chiefly problems and cases. All phases of fund accounting and all principles of system work will be covered. Prep. 41-50; 2 Class Hrs.; 2 Lab. Hrs.; 3 Credit Hrs.

Industrial Relations

42-10 *Personnel* — The purpose of this course is to survey the work of the personnel department. The what and how of the employment office will be analyzed along with the current practices in the conduct of human relationships in industry. 3 Class Hrs.; 3 Credit Hrs.

42-17 *Problems in Personnel* — An examination of selected problems in industrial relations, with emphasis on government regulation in the fields of collective bargaining, wage policy, hiring practices, and union activities. The case method will be used to explore practical problems arising in the management of industry. Prep. 42-10; 3 Class Hrs.; 3 Credit Hrs.

42-44 *Wage Administration* — This course includes both practical and theoretical issues of wages and income; the economic and social function of wages, wage theories, wage practices of industrial management, collective bargaining of wage adjustments, fringe issues, legislative supplements, income security, and national wage policy. Prep. 20-26; 4 Class Hrs.; 4 Credit Hrs.

42-52 *Motion and Time Study* — This course is designed for students in Business Administration to show the proper use of work simplification and time study. The student is instructed in the use of process analysis, operation analysis, man-machine analysis, and micromotion analysis. This is accomplished through lectures, discussions and actual laboratory projects.

Time study is discussed and the student is instructed in the correct use of it and how this tool can be used as an aid to management. Prep. 45-34, 45-22; 2 Class Hrs.; 2 Lab. Hrs.; 3 Credit Hrs.

42-58 *Testing and Guidance* — This is a study of the creation and administration of industrial tests. The purpose is to provide a background for organizing a battery of tests and providing practice in the use of these tests. Course No. 25-19 may be substituted for this course. 4 Class Hrs.; 4 Credit Hrs.

42-61 *Seminar in Collective Bargaining* — The meetings will be devoted to discussion of cases or reports on problems actually faced by industrial relations departments dealing with employees through collective bargaining. Broad issues of management authority, governmental regulation of labor-management relations, grievance procedures and arbitration will be analyzed. Research into more specific issues will be undertaken by students. Prep. 20-26; 4 Class Hrs.; 4 Credit Hrs.

42-62 *Seminar in Collective Bargaining* — This is a continuation of 42-61 — in which greater emphasis will be placed upon individual research and reports. Prep. 42-61; 5 Class Hrs.; 5 Credit Hrs.

Marketing and Advertising

43-08 *Sales Engineering* — The purpose of this course is to develop among industrial engineers a working and essential knowledge of the marketing function. By means of the seminar method the course deals with such fundamentals as classification of commodities, structure of markets, and functions of the promotional departments; contributions of research; problems of sales management. 3 Class Hrs.; 3 Credit Hrs.

43-21 *Principles of Marketing* — This course is designed to acquaint the student with the principles underlying the distribution of merchandise. Textbook assignments and lectures introduce a knowledge of the place of marketing in our modern economic order; the basic structure of markets; the main functions of marketing; the general classification of commodities into major types; the activities of several types of middlemen; the work of the commodity exchanges and co-operative marketing associations; and the development of chain stores, mail order houses, and department stores. 3 Class Hrs.; 3 Credit Hrs.

43-22 *Principles of Advertising* — The purpose of this course is to acquaint the student with the fundamental principles and facts which must be known by the men and women who are planning to select advertising as a career. The economic background of the subject and its development is presented, together with a survey of the methods for planning and preparing advertisements actually followed in the advertising offices. Consideration is given to human instincts, buying habits, argumentative and suggestive appeals, color, headlines, layout, illustrations, and trademarks. 3 Class Hrs.; 3 Credit Hrs.

43-30 *Salesmanship* — The objective of this course is twofold: (1) To provide the student who is interested in a career in marketing and advertising, but not necessarily in personal selling, with a working and essential knowledge of sales functions and procedures and the role of the salesman in modern marketing process; (2) for those students interested in entering the field of personal selling as a career, a greater knowledge of modern selling techniques, including a thorough appreciation and understanding of the relation that exists between personal selling and the many marketing aids and techniques contained in a fully developed sales program. Prep. 43-21, 22; 4 Class Hrs.; 4 Credit Hrs.

43-31 *Copywriting* — Facility in dealing with effective advertising copy, whether from the point of view of creating it, selling it, or appraising it, is the aim of this course. Consideration is given to the relation of copy and headline to layout, the preparation of headlines and slogans and the principles of copy construction. Emphasis is placed upon analysis and preparation of the many types of copy required for different purposes and different kinds of advertising media. Prep. 43-21, 22; 2 Class Hrs.; 2 Credit Hrs.

43-32 *Sales Management* — The study of actual case materials forms the basis of this course. In each case the facts are analyzed and solutions proposed. The major problems of sales management cover the entire range of the marketing operation: What to sell? To whom shall products be sold? By what means or methods and at what prices and terms? The answering of these questions involves consideration of merchandising policies and organization, marketing channels, marketing research and sales analysis, pricing and credit policies, sales methods, sales campaigns, management of the sales force, and the planning and control of sales operations. Prep. 43-21, 22; 6 Class Hrs.; 6 Credit Hrs.

43-40 *Advertising Production* — Familiarity with mechanical problems and processes in advertising, including some knowledge of production techniques in television and radio, is the objective of this basic course. Major attention is given to printed advertising — publication, letters, folders, booklets. Elements of the course are: Visualizing the advertising idea; preparing the layout, including lettering and rough sketching; selecting the illustration; the use of color; photo-engraving and other illustrative processes; selection of type; determination of space requirements; printing and paper; and the working out of advertising production schedules. Prep. 43-22; 4 Class Hrs.; 3 Credit Hrs.

43-43 *Marketing Research* — The scope and uses of market research and analysis, together with their basis in scientific method, are considered at some length to reveal specific practical applications of this modern marketing tool to business needs. Quantitative and qualitative sales analysis, market trends, advertising research, product analysis, territory and sales quota determination are considered fully and related to basic methods of measuring the effectiveness of the marketing-advertising operation. Prep. 43-32; 4 Class Hrs.; 4 Credit Hrs.

43-44 *Foreign Marketing* — The purpose of this course is to give the student of marketing a knowledge of the problems, policies, and techniques essential to effective sales in foreign markets. Throughout the course emphasis is placed upon the differences in the nature of the problems encountered and the practices followed in this highly specialized field. Prep. 43-32; 3 Class Hrs.; 3 Credit Hrs.

43-46 *Credits and Collections* — This course is designed to acquaint the student with modern methods of credit investigation, determination, and collections. Consideration will be given to credit instruments, mercantile credit practices and policies, mercantile and special agencies, problems and policies in retail credit, and legal right in collecting. Prep. 43-22; 3 Class Hrs.; 3 Credit Hrs.

43-52 *Retail Merchandising* — The purpose of this course is to study the principles of successful retailing and to acquaint the student with the more modern methods of operating a retail organization. The course opens with a review and a more detailed discussion of markups, markdowns, and markons. Consideration is then given to the operating statement as it applies to the retailer, the buying function, pricing of merchandise and the development of price lines, the control of inventory, stock turnover, the selection and management of retail sales personnel, and budgeting. Throughout the course merchandise planning is discussed and illustrated. Prep. 43-32 or 45-52; 4 Class Hrs.; 4 Credit Hrs.

43-53 *Problems in Advertising* — Using actual case materials, this course comprehends a wide variety of basic promotional problems in representative industries and firms. Careful attention is given to analysis and solution of divergent problems involving the profitable use of advertising in relation to the marketing strategy as a whole. The cases illustrate significant differences in buying habits and motives and afford opportunity to appraise a broad range of advertising and sales promotion programs precisely as they were evolved. Prep. 43-22, 43-32; 3 Class Hrs.; 3 Credit Hrs.

43-54 *Problems in Advertising* — Concluding the case work carried on in 43-53, this course seeks to develop a thorough understanding of the administrative aspects of advertising from both the advertiser's and the advertising agent's point of view and at the same time to develop a deeper comprehension of the economic effects of advertising. It intensifies previous study of some of the cases with particular respect to the media selection and the control and measurement of advertising effort. Taking a broad view on the basis of individual cases it also analyzes the influences of advertising and allied promotions upon our economy. Prep. 43-53; 4 Class Hrs.; 4 Credit Hrs.

43-62 *Seminar in Marketing* — This seminar course, taken in the last semester of the senior year, is intended to give students majoring in the field an opportunity to pursue further those specific aspects of marketing which are of particular interest to the student and in which he feels the need for additional information and training. Individual research and reports are the basis of the seminar meetings. 4 Class Hrs.; 4 Credit Hrs.

Finance and Insurance

44-13 *Construction Finance* — The financial problems confronting the setting up of engineering and construction organizations and the methods of providing funds to carry on projects constitute the subject matter to be studied. This will include a consideration of the various forms of business organization from the legal as well as the operational point of view. The uses of capital stock, mortgage bonds, land trust certificates, purchase money mortgages, together with the importance of appraisals in the financing of public projects, projects of private enterprise, public utilities, and expansion of these services are studied. The problems of providing working capital and the use of bank credit are also considered. 3 Class Hrs.; 3 Credit Hrs.

44-14 *Industrial Finance* — This course takes up the various problems encountered in the promotion of new businesses and the reorganization and management of old ones.

Emphasis is placed on problems encountered in administering the working capital and in raising fixed capital. Methods of measuring financial strength and the proper management of earnings are covered. Finally, ways and means of working with the courts in insolvency and bankruptcy are taken up with emphasis on ways to avoid financial difficulties. 3 Class Hrs.; 3 Credit Hrs.

44-20 *Introduction to Finance* — An introductory survey designed to acquaint the student with the role of finance in the economic world. The survey includes capital formation and uses, financial institutions and their functions, descriptive analysis of banks, investment companies, insurance companies and brokerage houses, farm credit organizations, and consumer credit agencies. 3 Class Hrs.; 3 Credit Hrs.

44-22 *Principles of Insurance* — The purpose of the course is to provide a comprehensive knowledge of insurance principles and coverage such as will provide a broad foundation for the student who plans to enter the business of insurance or enable the man or woman in business to plan a satisfactory program for personal needs or business responsibilities. Content: the basic principles of insurance, solving the economic problems of risk, types of insurance contracts, legal interpretation of the insurance contract, types of insurance, co-operative organizations in the field of insurance. 3 Class Hrs.; 3 Credit Hrs.

44-31 *Business Finance* — The fundamental principles of finance are approached from the point of view of the business man. Methods of organizing and financing new and old business ventures are integrated with present-day practice. Merits of partnerships and corporations from the standpoint of liability, risk and taxes are considered. Consideration is given to the various factors that influence capital structure and the services of the investment banker; the Securities Exchange Act and Blue Sky Laws; the liabilities and privileges of stockholders and directors. Prep. 44-21; 4 Class Hrs.; 4 Credit Hrs.

44-32 *Business Finance* — This course covers the financial aspects of sales, prices and markets; methods of raising short-term working capital and problems involved in keeping it revolving. The proper administration of income to meet the objectives of the company, and the part played by depreciation surplus and dividend policy are considered. Methods of evaluation as applied to various types of business from the standpoint of the buyer and seller. The course also includes principles to be applied in consolidating or merging companies or recapitalizing problems dealing with receivership and bankruptcy. Prep. 44-31; 4 Class Hrs.; 4 Credit Hrs.

44-33 *Insurance Problems* — An advanced course in insurance, covering in detail life insurance and fire insurance. Considers problems in basic coverages, rate making, claims, procedure, management of insurance companies and the policy holder. Prep. 44-22; 3 Class Hrs.; 3 Credit Hrs.

44-34 *Insurance Problems* — Continues 44-33 with emphasis on the same problems but as they are encountered in the fields of casualty insurance and inland marine insurance. Prep. 44-33; 3 Class Hrs.; 3 Credit Hrs.

44-41 *Investments* — This course is concerned with investment analysis. It covers methods of analyzing the industry, the particular company in the industry, and the specific securities of the company. Factors that enter into the rating of stocks and bonds, such as number of times interest earned, capital structure and asset value are taken up in order. Also included is a study of protective covenants and remedies of junior and senior security holders. Prep. 44-32; 3 Class Hrs.; 3 Credit Hrs.

44-42 *Investments* — This course is concerned with the problems of managing investment funds. Through the study of case material and readings, principles are developed for analyzing the particular investment needs of an individual or institution. Then comes the selection of securities to fit the need. The advantage and disadvantage of stocks and bonds and all types of investments are related to fluctuations in the business cycle and money market conditions. Prep. 44-41; 3 Class Hrs.; 3 Credit Hrs.

44-43 *Mathematics of Finance* — This course covers the basic mathematics essential to an understanding of financial computations, including the fundamental operations in algebra, simple equations, ratios and proportions, and logarithms, together with their application to problems in simple interest, discounts and partial payment. 3 Class Hrs.; 3 Credit Hrs.

44-44 *Mathematics of Finance* — A continuation of 44-43. This course will cover compound interest, annuities, amortization and sinking funds, bond valuation, depreciation and life insurance. Prep. 44-43; 3 Class Hrs.; 3 Credit Hrs.

44-51 *Trust Management* — This course deals with the creation of personal and corporate trusts, functions of the trust officer, legal rights and duties of the parties, problems of Lifeman and Remainderman, government supervision, and investment problems. Prep. 44-42; 3 Class Hrs.; 3 Credit Hrs.

44-52 *Security Markets* — This is a study of our security markets, how securities are bought and sold, the future market, the brokerage house, government regulation, and the problems of pricing. Prep. 44-42; 4 Class Hrs.; 4 Credit Hrs.

44-61 *Seminar in Finance and Insurance* — This senior course is intended to give students majoring in the field of finance and insurance an opportunity to pursue research work in the specific aspects of this field. Each student selects a topic in which he has a particular interest and where he feels the need of additional information. Oral reports, group discussion. Prep. 44-42; 3 Class Hrs.; 3 Credit Hrs.

44-62 *Seminar in Finance and Insurance* — This course gives the student the opportunity to continue the individual research and group discussions which began in 44-61. Prep. 44-61; 4 Class Hrs.; 4 Credit Hrs.

Business Management

45-21 *Industrial Management* — This course is intended to present the basic principles which are involved in the several areas of management activity. It is designed as a first approach for students into the policies and problems encountered in business. The study revolves about the initiation and operation of business from the viewpoint of financing the organization of personnel, the use of physical facilities and the operating features of a going concern as they pertain to the use of men, machines, and money. 3 Class Hrs.; 3 Credit Hrs.

45-22 *Industrial Management* — A continuation of 45-21 in which emphasis is placed upon personnel evaluation, rating, and methods of payment, the control

of production and the relation of costing and sales procedures to the efficiency and management of the enterprise. Prep. 45-21; 3 Class Hrs.; 3 Credit Hrs.

45-30 *Production Processes* — This course is designed specifically for Business Administration students to familiarize them with the techniques, processes, and machines used in the manufacturing industries, so they may recognize a few of the problems encountered.

Some of the items covered include the making and shaping of steel, foundry practice, die casting, plastics manufacturing, and the use of machine tools. The lectures are supplemented by movies, exhibits, and plant tours. Prep. 45-22; 4 Class Hrs.; 4 Credit Hrs.

45-33, 34 *Management Problems* — This course will analyze timely, significant problems that confront general management. The principles of industrial management previously studied are given practical application through lectures, discussions, and case studies. Prep. 45-22; 3 Class Hrs.; 3 Credit Hrs.

45-51 *Office Management* — This is an application of the principles of management to the specialized problems of many different kinds of offices. Prep. 45-34; 3 Class Hrs.; 3 Credit Hrs.

45-52 *Management of Sales* — This seminar course, taken in the first term of the Senior year, is intended to give students majoring in Business Management an opportunity to examine the organization and the operation of the firm's sales department. Emphasis is placed upon management's interest in effective marketing and the co-ordination of sales with other operations and departments of the firm. Prep. 45-34; 2 Class Hrs.; 2 Credit Hrs.

Business Law

46-03 *Business Law* — This course is designed to give a fundamental knowledge of basic legal principles to the engineering student through the study of the origin and development of law; the elements of contract, the agency relationship and its operation; the law of workmen's liens and the origin and expansion of the law in workmen's compensation. 6 Class Hrs.; 3 Credit Hrs.

46-41 *Business Law I* — This course is introduced by a study of legal history, court organization and procedure. The law of contracts as it affects the businessman is then considered. The case approach is used throughout the study of contracts and subsequent business law courses. The objective of the several law courses is to make the student ever conscious of the possibilities for legal liability arising out of a given course of action. 4 Class Hrs.; 4 Credit Hrs.

46-42 *Business Law II* — The specialized aspects of contract law are considered in the study of the law pertaining to negotiable instruments. The requirements for negotiability, types of endorsements, holders in due course and defenses, and liabilities of parties are considered. The Bank Collection Code is studied. Prep. 46-41; 4 Class Hrs.; 4 Credit Hrs.

46-51 *Business Law III* — The law concerning personal property and the sale of personal property is covered. Warranties, the passing of title, the Statute of

Frauds, and the remedies of buyer and seller are considered. Prep. 46-41; 4 Class Hrs.; 4 Credit Hrs.

46-52 *Business Law IV* — The law of business associations consisting of a treatment of agency, partnership, and corporation law are considered. Prep. 46-41; 4 Class Hrs.; 4 Credit Hrs.

46-53 *Income Tax Law* — A comprehensive study of the Internal Revenue Code and Treasury Regulations is undertaken in connection with the preparation of income tax sections for individuals and partnerships. Payroll tax accounting is reviewed. 3 Class Hrs.; 3 Credit Hrs.

46-54 *Income Tax Law* — This course is a continuation of 46-53. The preparation of returns for corporations and estates and trusts is emphasized. Research problems are assigned to the students in order to acquaint them with the working tools of tax practice — the complete Federal Tax Library. Prep. 46-53; 3 Class Hrs.; 3 Credit Hrs.

46-55 *Labor Law* — This course studies the provisions, the administration, and the adjudication of legislation in the field of labor standards and industrial relations. Included are the Railway Labor Act, the Anti-Injunction Act, the Wagner Act, the Fair Labor Standards Act, the Fair Employment Practices Act, the Taft-Hartley Act, and defense regulations. The problems of state and federal authority will be covered. Prep. 20-26; 4 Class Hrs.; 4 Credit Hrs.

Secretarial Studies

47-01 *Typing I* — This course provides basic training in typewriting with emphasis on a complete mastery of the keyboard and the development of speed and accuracy. Instruction is given in centering, tabulation, and elementary business letters. 3 Class Hrs.; 3 Credit Hrs.

47-02 *Typing II* — This course continues the work in 47-01 with a reconstruction of basic skills and further development of speed and accuracy. Advanced problems in planning and arranging business letters and tabulations are worked out. Instruction is given in the typing of manuscripts and business forms. Prep. 47-01; 3 Class Hrs.; 3 Credit Hrs.

47-03a *Typing Lab I* — In this course the student continues to work for improved speed and accuracy. Practice is provided in the typing of business forms. Elementary transcription is introduced for students studying shorthand. Prep. 47-02; 3 Lab. Hrs.; 1 Credit Hr.

*47-04a *Typing Lab II* — This course continues the work in 47-03a with further development of speed and accuracy. The work also covers advanced typing problems such as executive reports, minutes of meetings, manuscript typing, corporation reports, and legal documents. Prep. 47-03a; 6 Lab. Hrs.; 1 Credit Hr.

47-11 *Typing A* — This course provides a thorough foundation in typewriting. Emphasis is placed on a mastery of the keyboard and development of speed and

*Five-week term course.

accuracy. Instruction is given in business letters, addressing envelopes, tabulation, and centering. 4 Class Hrs.; 6 Lab. Hrs.; 4 Credit Hrs.

47-12 *Typing B* — This course continues the work in 47-11 with a reconstruction of basic skills and further development of speed and accuracy. Advanced problems in planning and arranging business letters and tabulations are worked out. Instruction is given in the typing of manuscripts and business forms. Prep. 47-11; 2 Class Hrs.; 3 Lab. Hrs.; 2 Credit Hrs.

47-03 *Shorthand I* — The aim of this course is mastery of the principles of Gregg Simplified Shorthand. 3 Class Hrs.; 3 Credit Hrs.

*47-04 *Shorthand II* — This course develops speed and accuracy in taking dictation and provides some pretranscription training. Prep. 47-03; 4 Class Hrs.; 2 Credit Hrs.

47-21 *Transcription I* — This course develops correct transcribing techniques with emphasis on the mailability of transcribed letters. One of the major objectives of the course is the improvement of skills in shorthand, typing, and English. Prep. 47-04a or 47-12 and 47-04; 4 Class Hrs.; 6 Lab. Hrs.; 4 Credit Hrs.

47-22 *Transcription II* — This course continues the work in 47-21 with further emphasis on the improvement of shorthand, typing, and English skills. Prep. 47-21; 4 Class Hrs.; 6 Lab. Hrs.; 4 Credit Hrs.

Professional Development

50-01 *Professional Development* — An over-all discussion of job-getting techniques covering in order such items as a survey of the occupational field wherein the engineering training can be profitably applied, a market survey of opportunities, a study of the accepted techniques related to job-getting efforts, such as qualification records, prospect files, letter writing, interviews, etc., planning and executing the job-getting campaign.

Concurrently and co-ordinated with the foregoing, the purposes, objectives, and activities of the professional societies and of the Engineers' Council for Professional Development will be developed with specific reference to the ethics of the profession, the licensing of engineers, and after-college continuation of educational progress. 3 Class Hrs.; 3 Credit Hrs.

Department of Military Science

Purposes and Requirements of the R.O.T.C. Program

The general object of the Reserve Officers' Training Corps is to qualify students for positions of leadership in time of national emergency, and to provide junior officers for the Officers' Reserve Corps (ORC), the National Guard, and the Regular Army. The program consists of two parts, the Basic Course (180 hours)

*Five-week term course.

and the Advanced Course (300 hours). Signal Corps and Engineer Corps Branches of the R.O.T.C. are maintained at Northeastern University.

Basic Course: All applicants at the time of enrollment must be (1) physically qualified under standards prescribed by the Department of the Army; (2) not less than 14 years of age and under 23 years at time of enrollment; (3) regularly enrolled students in the Day Colleges of Northeastern University.

Advanced Course: All applicants at the time of admission to this course must (1) be under 27 years of age; (2) have completed the Basic Course or received equivalent credit for previous military training; (3) have been selected by the College Administration and the Professor of Military Science and Tactics (PMS&T); (4) execute a written agreement with the government to complete the Advanced Course including attendance at one R.O.T.C. Summer Camp as specified below. Formally enrolled students of the Advanced Course will be paid a monetary allowance monthly in lieu of subsistence at a daily rate specified by the Department of the Army for a total period not in excess of 595 days. (Current rate \$27.00 per month.) Students who successfully complete the Advanced Course will be commissioned as Second Lieutenants in the Reserve Corps or in the Regular Army.

Previous Training: Students who have had previous honorable active service in the Army, Navy, Air Force, Marine Corps, or Coast Guard may receive credit toward completion of the two years of the Basic Course, subject to approval of the Professor of Military Science and Tactics, as follows: (1) twelve months or more, credit not to exceed the entire Basic Course; (2) six months or more, credit not to exceed the first year of Basic Course; (3) less than 6 months, no credit.

For previous training in a junior division (high school) R.O.T.C. Unit, credit will be determined by the Professor of Military Science and Tactics. Normally credit for the first year Basic Course will be granted for three years of junior R.O.T.C. training.

Summer Camp: Attendance at one advanced course camp is required of all students enrolled in the Advanced Course. The camp period of six weeks is normally conducted during June and July between the student's junior and senior years. Transportation to and from camp is furnished by the government. While at camp, students do not receive the monetary allowance in lieu of subsistence but are paid at the rate of \$75.00 per month. The Engineer Corps Camp is normally held at Fort Belvoir, Virginia. The Signal Corps Camp is normally held at Fort Monmouth, New Jersey.

Deferment: Although enrollment in R.O.T.C. does not of itself exempt or defer a student from induction, many such students are deferred under quotas prescribed by the Secretary of Defense in order that they may complete both their academic curricula and their military training. Assignment of deferred status within the quota allotted to Northeastern will be a function of the PMS&T. Once granted, a deferment is valid until completion of his course of study if the student remains in good standing at the college.

Deferments are granted to students enrolled in the Basic as well as to those in the Advanced Course. Recent experience indicates that most of the R.O.T.C. students who give promise of becoming capable officers are deferred until completion of their work for the baccalaureate degree.

General Index

	<i>Page</i>
Absences.....	44
Accident and Sickness Insurance.....	39
Accounting Curriculum.....	89
Accounting Laboratory.....	28
Accounting Society.....	31
Activities.....	29
Administrative Officers.....	8
Administrative Staff.....	9
Admission Requirements	
College of Liberal Arts.....	60
College of Business Administration.....	83
College of Engineering.....	97
Advanced Standing	
College of Liberal Arts.....	61
College of Business Administration.....	84
College of Engineering.....	98
Advertising Club.....	31
Advertising Laboratory.....	28
Aims and Methods—Liberal Arts—Business Administration—Engineering.....	54, 82, 96
Alumni Association.....	50
Application for Admission	
College of Liberal Arts.....	61
College of Business Administration.....	84
College of Engineering.....	98
Application Blank.....	191
Army, Department of Military Science.....	189
Art Club.....	31
Art Curriculum.....	65
Athletics.....	29
Athletic Field.....	29
Attendance.....	44
Awards and Prizes.....	46
Biological Laboratory Equipment.....	23
Biology—Chemistry Curriculum.....	67
Biology Club.....	31
Biology Curriculum.....	66
Books and Supplies.....	41
Boston—A Great Educational Center.....	20
Botolph Building.....	22
Buildings and Facilities.....	20
Business Administration and Law—Combined Program.....	88
Business Administration, College of.....	81
Business and Statistical Laboratory.....	28
Business Management Curriculum.....	93
Calendar for College Year 1952–1953 Freshman.....	4
Camera Club.....	31

NORTHEASTERN UNIVERSITY

	<i>Page</i>
<i>Cauldron</i> , College Annual.....	30
Changes in Program.....	41
Chapel Preachers.....	17
Chemical Engineering Curriculum.....	106, 107
Chemical Engineering Laboratory Equipment.....	27
Chemical Laboratory Deposit.....	40
Chemistry Curriculum.....	68
Chemistry Laboratories and Equipment.....	23
Chess Club.....	31
Civil Engineering Curriculum.....	100, 101
Civil Engineering Laboratories and Equipment.....	24
Class Organization.....	34
Condition Examinations.....	42
Conduct.....	43
Convocations.....	34
Co-operative Plan.....	34
Correlation of Theory and Practice.....	36
Earnings.....	37
Faculty Co-ordinators.....	35
How It Works.....	35
Location of Work.....	37
Placement at Work.....	35
Positions Available.....	37
Records of Co-operative Work.....	37
Reports.....	37
Supervision and Guidance.....	36
Types of Co-operative Work.....	38
Corporation.....	5
Counselors.....	46
Courses of Instruction, Synopses of.....	111-190
Accounting.....	177
Biology.....	129
Business Law.....	187
Business Management.....	186
Chemistry.....	134
Chemical Engineering.....	126
Civil Engineering.....	112
Commercial Education and Secretarial Studies.....	188
Drawing.....	138
Economics.....	147
Education.....	151
Electrical Engineering.....	121
English.....	168
Finance and Insurance.....	184
Fine Arts.....	165
French.....	173
Geology.....	139
German.....	174

	<i>Page</i>
Government.....	152
Graduate Courses.....	138
History.....	154
Industrial Engineering.....	128
Industrial Relations.....	181
Marketing and Advertising.....	182
Mathematics.....	139
Mechanical Engineering.....	116
Military Science.....	189
Music.....	168
Philosophy.....	158
Physical Education.....	146
Physics.....	142
Professional Development.....	189
Psychology.....	159
Secretarial Studies.....	188
Sociology.....	163
Spanish.....	176
Credit Hour—Explanation of.....	112
Day College Committees.....	7
Day College Officers.....	8
Dean's List.....	43
Debating Society.....	31
Deferred Payment Fee.....	40
Degrees	
Liberal Arts.....	62
Business Administration.....	85
Engineering.....	99
Deposit, Laboratory.....	40
Design and Drafting Rooms.....	28
Discipline.....	43
Dramatic Club.....	32
Economics Curriculum.....	69
Educational Guidance.....	46
Electrical Engineering Curriculum.....	104, 105
Electrical Engineering Laboratory Equipment.....	26
Engineering, College of.....	95
Engineering Societies, National.....	32
English-English Journalism Curriculum.....	70
Entrance Requirements	
College of Liberal Arts.....	60
College of Business Administration.....	83
College of Engineering.....	97
Evening Courses, College of Liberal Arts.....	55
Examinations.....	42
Executive Council.....	6
Expenses.....	38, 39, 40, 41
Faculty.....	9

	<i>Page</i>
Faculty Committees.....	7
Fees.....	39, 40
Finance and Insurance Curriculum.....	92
Four-Year Plan.....	64
Fraternities.....	34
Freshman Academic Calendar.....	4
Freshman Counseling.....	45
Freshman Counselors.....	46
Freshman Orientation Class.....	45
Freshman Orientation Period.....	45
General Information.....	38
General Statement.....	19
Gifts and Bequests, Form.....	Inside Front Cover
Grades.....	42
Graduate Study.....	63
Graduation Fee.....	40
Graduation with Honors.....	63, 85, 99
Graduation Requirements.....	62, 85, 99
Greenleaf Building.....	22
Guidance.....	46
Gymnasium.....	29
History-Government Curriculum.....	71
Honor Societies.....	30
Housing — Fraternity.....	45
Housing — Men.....	44
Housing — Women.....	45
Husky Key Society.....	32
Industrial Engineering Curriculum.....	108, 109
Industrial Engineering Equipment.....	28
Industrial Relations Curriculum.....	90
Instructional Staff.....	9
Inter-Fraternity Council.....	34
International Relations Club.....	32
Investment Society.....	32
Laboratories.....	23
Laboratory Deposits and Fees.....	39, 40
Late Registration Fee.....	40
Liberal Arts and Law, Combined Program.....	64
Liberal Arts, College of.....	53
Liberal Arts, Preparation for a Career.....	55
Library Building.....	22
Location of University.....	21
Marketing Associations.....	33
Marketing and Advertising Curriculum.....	91
Marks.....	42
Mathematics Curriculum.....	72
Mathematics Society.....	33
Mechanical Engineering Curriculum.....	102, 103

	<i>Page</i>
Mechanical Engineering Laboratory Equipment.....	25
Musical Clubs.....	33
National Engineering Societies.....	32
<i>Northeastern News</i>	30
Omega Sigma Society (for women students).....	33
Parking Facilities.....	22
Part-Time Work.....	41
Payments, Tuition.....	40
Personal Interview.....	60, 83, 97
Physical Examination.....	45
Physical Training Equipment.....	29
Physics Curriculum.....	73
Physics Laboratories Equipment.....	24
Predental Curriculum.....	74
Prelegal Curriculum.....	75, 88
Premedical Curriculum.....	76
Premedical Technology Curriculum.....	77
Preparation—Explanation of.....	112
Prizes.....	46
Professional Societies and Clubs.....	31
Program Changes—Policy of University.....	41
Programs of Study.....	63, 86, 100
Psychology Curriculum.....	78
Psychology Laboratories.....	24
Psychology Society.....	33
Publications.....	30
Radio Club.....	33
Refunds.....	40
Registration.....	61, 84, 98
Reports on Scholastic Standing.....	43
Requirements for Graduation.....	62, 85, 99
Reserve Officers Training Corps Program—General Information.....	189
Reserve Officers Training Corps Program.....	43
College of Liberal Arts.....	62
College of Business Administration.....	85
College of Engineering.....	99
Richards Hall.....	21
Scholarships.....	46
Scholarship Requirements.....	62, 85, 99
Scholastic Year for Seniors.....	44
Science Hall.....	22
Secretarial Studies.....	87
Ski Club—Hus-Skiers.....	32
Sociology Curriculum.....	79
Square Dance Club.....	33
Statistics Laboratory.....	28
Student Activities.....	29
Student Center Building.....	21

	<i>Page</i>
Student Council.....	30
Student Union.....	31
Supplies, Textbooks.....	41
Table of Contents.....	3
Teaching Fellows.....	15
Tennis Club.....	33
Theses.....	85
Tuition.....	38, 39
Tuition Deposit.....	61, 84, 98
Typewriting.....	28
Typewriting Laboratory.....	28
University Activities Fee.....	39
University Committees.....	6
Yacht Club.....	34
Yearbook.....	30

NORTHEASTERN UNIVERSITY
Department of Admissions
360 HUNTINGTON AVENUE
BOSTON 15, MASS.

OFFICE HOURS
DEPARTMENT
OF ADMISSIONS
9 A.M. to 4 P.M.
daily
Saturday 12.00
Noon
Wednesday Eve-
nings by Appointment

APPLICATION FOR ADMISSION

(A nonreturnable fee of five dollars must accompany this application
Make checks, money orders, or drafts payable to
Northeastern University)

To Director of Admissions:

I ^{Mr.}
^{Miss}
Print First Middle Last Name
hereby apply for admission to the College of.....
.....for the school year beginning.....
I expect to major in.....Veteran.....
Yes or No

NOTE: The applicant should fill out the following form
(both sides) with care.

Address.....
.....Tel.....
Date of Birth.....Age.....
Are you a citizen of the United States?.....
Graduate of.....High School, Year.....
Location of High School.....
Name of Principal.....
Name and address of other high schools you have attended.....
.....
Name of Principals.....
.....
If not a graduate, state the years of attendance and why you left.....
.....
Father's, mother's, or guardian's name and address.....
.....
.....
Father's work, business or profession.....
.....
Names and addresses of two persons to whom we may direct inquiries
concerning you.
.....
.....

(OVER)

Weight.....Height.....

Have you any physical infirmities? Explain, if any.....

Defects of speech.....

Defects of hearing.....

Defects of sight.....

Bodily infirmities.....

Is your general health good, fair, or poor?.....

Have you done collegiate work elsewhere?.....

If so, name and address of college or university.....

Applicant must request the college or university which he has attended to send official transcripts of his records direct to the Director of Admissions, Northeastern University.

Do you expect advanced credit for past collegiate work?

List all athletics and other extracurricular high school activities you have engaged in.....

Names and addresses of all past employers with brief description of each job, length of employment, and wages received.....

Declaration of Parent or Guardian

This application has been read by me and has my approval.

*.....
Signature of Parent or Guardian*

NORTHEASTERN UNIVERSITY

(COEDUCATIONAL)

*COLLEGE OF LIBERAL ARTS

Offers a broad program of subjects serving as a foundation for the understanding of modern culture, social relations, and technical achievement. Varied opportunities are available for vocational specialization. Degree: Bachelor of Science or Bachelor of Arts.

*COLLEGE OF ENGINEERING

Offers curricula in Civil, Mechanical, Electrical, Chemical, and Industrial Engineering. Classroom study is supplemented by experiment and research in well-equipped laboratories. Degree: Bachelor of Science in the professional field of specialization.

The College of Engineering also offers during evening hours graduate programs of instruction leading to the degree of Master of Science in certain fields of civil, mechanical, and electrical engineering.

*COLLEGE OF BUSINESS ADMINISTRATION

Offers curricula in Accounting, Industrial Relations, Marketing and Advertising, Finance and Insurance, and Business Management. Each curriculum represents in itself a broad survey of business technique, differing from the others chiefly in emphasis. Degree: Bachelor of Science in Business Administration.

SCHOOL OF LAW

Offers day and evening undergraduate programs. Admits those who present a minimum of one-half of the work accepted for a bachelor's degree in an approved college or its full equivalent. Degree: Bachelor of Laws. Also offers a graduate program leading to the degree of Master of Laws.

SCHOOL OF BUSINESS

Offers curricula through evening classes in Accounting, Business Management, Industrial Management, Marketing, Law and Business, Engineering and Management. Conducts certificate programs in the Labor Relations Institute, Institute of Retailing, Real Estate Institute, Office Management Institute, Institute of Insurance, and the Traffic Management Institute. Arranges intensive programs of one or more courses to serve special needs. Degree: Bachelor of Business Administration with appropriate specification.

The Graduate Division of the School of Business provides an evening program of graduate study leading to the degree of Master of Business Administration.

EVENING DIVISION OF THE COLLEGE OF LIBERAL ARTS

Offers courses in the fields of Economics, English, History, Government, Philosophy, Psychology, and Sociology; the program is equivalent in hours to one-half the requirement for the bachelor's degree, and prepares for the study of law and further study in Liberal Arts; special courses may be arranged. Degrees: Associate in Arts and Associate in Social Sciences.

*The Co-operative Plan

The Colleges of Liberal Arts, Engineering and Business Administration offer day programs and are conducted on the Co-operative Plan. After the freshman year students alternate periods of study with periods of work in the employ of business or industrial concerns. Under this plan they gain valuable experience and earn a large part of their college expenses. Full-time curricula are available for preprofessional students who do not desire the Co-operative Plan.

For further information regarding any of the above schools, address

NORTHEASTERN UNIVERSITY

BOSTON, MASSACHUSETTS

School of Law
47 MT. VERNON STREET

Other Schools
360 HUNTINGTON AVENUE



NORTHEASTERN UNIVERSITY

School of Law



1952 - 1953

Fifty-Fifth Year

NORTHEASTERN UNIVERSITY

School of Law

47 MT. VERNON STREET, BOSTON 8, MASSACHUSETTS

Telephone: Copley 7-6600

LOWELL S. NICHOLSON, *Dean*

Gifts and Bequests

Northeastern University will welcome gifts and bequests for the following purposes:

- (a) For its building program.
- (b) For general endowment.
- (c) For specific purposes which may especially appeal to the donor.

It is suggested that, when possible, those contemplating gifts or bequests confer with the President of the University regarding the University's needs before legal papers are drawn.

Gifts and bequests should be made only in the University's legal name, which is "Northeastern University."

NORTHEASTERN UNIVERSITY

School of Law



DAY, EVENING *and* GRADUATE PROGRAMS
CO-EDUCATIONAL

1952-1953

BOSTON 8, MASSACHUSETTS

April, 1952

TABLE OF CONTENTS

	<i>Page</i>
ACADEMIC CALENDAR OF THE SCHOOL OF LAW	5
THE NORTHEASTERN UNIVERSITY CORPORATION	6
COMMITTEES	7
THE SCHOOL OF LAW FACULTY	8
GENERAL INFORMATION —	
The University	11
The School of Law	12
Accreditation	12
Location	12
Library	13
ADMISSION OF STUDENTS —	
Requirements for Admission	14
Readmission	15
Application for Admission	15
Registration	16
Prelegal Program	16
Tuition and Fees	16
Scholarships and Prizes	17
Honor Awards	19
EDUCATIONAL PROGRAM —	
Day Division	20
Evening Division	20
Four Year Program	20
Graduate Division	20
Summer Session	21
Combined Programs	21
Method of Instruction	21
Legal Research	22
Faculty Advisers	23
REGULATIONS OF THE SCHOOL OF LAW —	
General Policy	23
Withdrawals	23
Attendance	23
Marking and Promotion System	24
Requirements for the Degrees	24
PROGRAMS OF STUDY	26
DESCRIPTION OF COURSES —	
Regular Courses	28
Seminar Courses	35
DEGREES CONFERRED IN JUNE, 1951	36
SCHOOL OF LAW ALUMNI ASSOCIATION	37
STUDENT COUNCILS, 1952	37
COLLEGES AND UNIVERSITIES REPRESENTED, 1951-1952	39
THE SCHOOLS OF NORTHEASTERN UNIVERSITY	Inside back cover

April, 1952 — September, 1953

APRIL							
S	M	T	W	T	F	S	
		1	2	3	4	5	
6	7	8	9	10	11	12	
13	14	15	16	17	18	19	
20	21	22	23	24	25	26	
27	28	29	30				

MAY							
S	M	T	W	T	F	S	
				1	2	3	
4	5	6	7	8	9	10	
11	12	13	14	15	16	17	
18	19	20	21	22	23	24	
25	26	27	28	29	30	31	

JUNE							
S	M	T	W	T	F	S	
1	2	3	4	5	6	7	
8	9	10	11	12	13	14	
15	16	17	18	19	20	21	
22	23	24	25	26	27	28	
29	30						

JULY							
S	M	T	W	T	F	S	
		1	2	3	4	5	
6	7	8	9	10	11	12	
13	14	15	16	17	18	19	
20	21	22	23	24	25	26	
27	28	29	30	31			

AUGUST							
S	M	T	W	T	F	S	
					1	2	
3	4	5	6	7	8	9	
10	11	12	13	14	15	16	
17	18	19	20	21	22	23	
24	25	26	27	28	29	30	
31							

SEPTEMBER							
S	M	T	W	T	F	S	
	1	2	3	4	5	6	
7	8	9	10	11	12	13	
14	15	16	17	18	19	20	
21	22	23	24	25	26	27	
28	29	30					

OCTOBER							
S	M	T	W	T	F	S	
		1	2	3	4		
5	6	7	8	9	10	11	
12	13	14	15	16	17	18	
19	20	21	22	23	24	25	
26	27	28	29	30	31		

NOVEMBER							
S	M	T	W	T	F	S	
						1	
2	3	4	5	6	7	8	
9	10	11	12	13	14	15	
16	17	18	19	20	21	22	
23	24	25	26	27	28	29	
30							

DECEMBER							
S	M	T	W	T	F	S	
	1	2	3	4	5	6	
7	8	9	10	11	12	13	
14	15	16	17	18	19	20	
21	22	23	24	25	26	27	
28	29	30	31				

JANUARY																
S	M	T	W	T	F	S										
				1	2	3										
4	5	6	7	8	9	10										
11	12	13	14	15	16	17										
18	19	20	21	22	23	24										
25	26	27	28	29	30	31										
FEBRUARY																
S	M	T	W	T	F	S										
1	2	3	4	5	6	7										
8	9	10	11	12	13	14										
15	16	17	18	19	20	21										
22	23	24	25	26	27	28										
MARCH																
S	M	T	W	T	F	S										
1	2	3	4	5	6	7										
8	9	10	11	12	13	14										
15	16	17	18	19	20	21										
22	23	24	25	26	27	28										
29	30	31														
APRIL																
S	M	T	W	T	F	S										
			1	2	3	4										
5	6	7	8	9	10	11										
12	13	14	15	16	17	18										
19	20	21	22	23	24	25										
26	27	28	29	30												
MAY																
S	M	T	W	T	F	S										
					1	2										
3	4	5	6	7	8	9										
10	11	12	13	14	15	16										
17	18	19	20	21	22	23										
24	25	26	27	28	29	30										
31																
JUNE																
S	M	T	W	T	F	S										
	1	2	3	4	5	6										
7	8	9	10	11	12	13										
14	15	16	17	18	19	20										
21	22	23	24	25	26	27										
28	29															

ACADEMIC CALENDAR OF THE SCHOOL OF LAW

June, 1952 — June, 1953

Summer Session, 1952

June	19-20	Thursday and Friday	Registration.
June	23	Monday	Classes begin.
July	4	Friday	Independence Day.
September	2-5		Examinations.
September	5	Friday	Summer session closes.

Fall Term, 1952

September	2-13		Registration.
September	15	Monday	Classes begin.
October	13	Monday	Columbus Day.
November	11	Tuesday	Armistice Day.
November	27-28	Thursday and Friday	Thanksgiving recess.
December	24	Wednesday	Christmas recess begins.

1953

January	2	Friday	Classes resume.
January	12-16		Upperclass examinations.
January	16	Friday	Fall Term closes.

Spring Term, 1953

January	19	Monday	Classes begin.
February	23	Monday	Washington's Birthday.
March	28	Saturday	Spring recess begins.
April	6	Monday	Classes resume.
May	18	Monday	Senior examinations begin.
May	25	Monday	Second-year examinations begin.
June	1	Monday	First-year examinations begin.
June	12	Friday	Spring Term closes.

THE NORTHEASTERN UNIVERSITY CORPORATION

ROBERT GRAY DODGE, *Chairman*
FRANK LINCOLN RICHARDSON, *Vice-Chairman*
CARL STEPHENS ELL, *President of the University*
ROBERT GREENOUGH EMERSON, *Treasurer*
EVERETT AVERY CHURCHILL, *Secretary*

JOSEPH F. ABBOTT
CHARLES FRANCIS ADAMS
O. KELLEY ANDERSON
HENRY N. ANDREWS
FREDERICK AYER
ARTHUR A. BALLANTINE
GEORGE L. BARNES
THOMAS P. BEAL
F. GREGG BEMIS
S. BRUCE BLACK
JOHN S. BOTTOMLY
RICHARD L. BOWDITCH
GEORGE R. BROWN
GEORGE A. BURNHAM
GODFREY L. CABOT
ELMER T. CARLSON
WALTER CHANNING
WILLIAM C. CHICK
ROBERT B. CHOATE
PAUL F. CLARK
GEORGE H. CLIFFORD
ALBERT M. CREIGHTON
ROBERT CUTLER
MARSHALL B. DALTON
EDWARD DANA
EDWARD DANE
RALPH M. DARRIN
CARL P. DENNETT
FREDERICK J. DILLON
DAVID F. EDWARDS
WILLIAM P. ELLISON
WALLACE FALVEY
JOHN WELLS FARLEY
JOSEPH F. FORD
NOBLE FOSS
ERNEST B. FREEMAN
JOHN L. GRANDIN, JR.
MERRILL GRISWOLD
H. FREDERICK HAGEMANN, JR.
GEORGE HANSEN
CHRISTIAN A. HERTER
CHARLES E. HODGES
HAROLD D. HODGKINSON
HARVEY P. HOOD
CHANDLER HOVEY
HOWARD M. HUBBARD
MAYNARD HUTCHINSON
RAY E. JOHNS
CHARLES B. JOHNSON
JACOB J. KAPLAN
MICHAEL T. KELLEHER
HARRY H. KERR

EDWARD A. LARNER
JOHN E. LAWRENCE
GALEN D. LIGHT
RALPH LOWELL
WILLARD B. LUTHER
EDWARD A. MACMASTER
HAROLD F. MASON
J. FRANKLIN McELWAIN
HUGH D. McLELLAN
EDWARD R. MITTON
IRWIN L. MOORE
IRA MOSHER
IRVING E. MOULTROP
GEORGE S. MUMFORD, JR.
EDWARD A. NATHANSON
HARLAN P. NEWTON
JOHN T. NOONAN
GEORGE OLMSTED, JR.
AUGUSTIN H. PARKER, JR.
THEODORE R. PEARY
EDWARD D. PHINNEY
FREDERICK S. PRATT
ROGER PRESTON
STUART C. RAND
WILLIAM M. RAND
NEAL RANTOUL
JAMES L. RICHARDS
JAMES C. RICHDALE
HAROLD B. RICHMOND
CHARLES F. RITTENHOUSE
LEVERETT SALTONSTALL
RUSSELL M. SANDERS
RALPH T. SAYLES
ANDREW S. SEILER
GIFFORD K. SIMONDS, JR.
JOSEPH P. SPANG, JR.
FRANK P. SPEARE
F. R. CARNEGIE STEELE
CHARLES STETSON
ABBOT STEVENS
EARL P. STEVENSON
ROBERT G. STONE
ROBERT T. P. STORER
FRANK H. STUART
RALPH E. THOMPSON
ELIOT WADSWORTH
SAMUEL WAKEMAN
EUSTIS WALCOTT
HAROLD J. WALTER
EDWIN S. WEBSTER, JR.
EDWARD A. WEEKS, JR.
SINCLAIR WEEKS

COMMITTEES

Advisory Committee of the Corporation for the School of Law

ROBERT GRAY DODGE, *Chairman*

GEORGE LOUIS BARNES
JOHN WELLS FARLEY

JACOB JOSEPH KAPLAN
STUART CRAIG RAND

University Executive Council

CARL STEPHENS ELL, *Chairman*

EVERETT AVERY CHURCHILL
ALBERT ELLSWORTH EVERETT

MILTON JOHN SCHLAGENHAUF
WILLIAM CROMBIE WHITE

University Cabinet

CARL STEPHENS ELL, *Chairman*

WILLIAM THURLOW ALEXANDER
EVERETT AVERY CHURCHILL
ALBERT ELLSWORTH EVERETT
GEORGE RAYMOND FENNELL
ROGER STANTON HAMILTON
CHARLES WILLIAM HAVICE
FREDERICK ROBERT HENDERSON
WILFRED STANLEY LAKE
DONALD HERSHEY MACKENZIE

GEORGE ARTHUR MALLION
HAROLD WESLEY MELVIN
RUDOLPH MAGNUS MORRIS
LOWELL STARBUCK NICHOLSON
WINTHROP ELIOT NIGHTINGALE
RUDOLF OSCAR OBERG
EDWARD SNOW PARSONS
MILTON JOHN SCHLAGENHAUF
J. KENNETH STEVENSON

WILLIAM CROMBIE WHITE

Committee on Administration of the School of Law

EVERETT AVERY CHURCHILL, *Vice-President*
LOWELL STARBUCK NICHOLSON, *Dean*
JOSEPH GERARD CRANE, *Assistant Dean*
HAROLD BENJAMIN ROITMAN, *Associate Professor of Law*
THOMAS JOSEPH O'TOOLE, *Associate Professor of Law*
ROBERT TRASK MANN, *Assistant Professor of Law*

THE SCHOOL OF LAW

Administrative Officers

ROBERT GRAY DODGE, A.B., A.M., LL.B., LL.D.

Chairman of the Corporation

CARL STEPHENS ELL, A.B., S.B., M.S., Ed.M., Sc.D., LL.D.

President of the University

EVERETT AVERY CHURCHILL, A.B., Ed.M., Ed.D.

Vice-President of the University

LOWELL STARBUCK NICHOLSON, LL.B.

Dean of the School of Law

JOSEPH GERARD CRANE, A.B., LL.B.

Assistant Dean of the School of Law

Faculty

LOWELL STARBUCK NICHOLSON, LL.B., Syracuse University

Dean and Professor of Law

JOSEPH GERARD CRANE, A.B., Boston College; LL.B., Harvard University

Assistant Dean and Professor of Law

EDWIN WILSON HADLEY, A.B., J.D., Stanford University; LL.M., Harvard University

Professor of Law

HAROLD BENJAMIN ROITMAN, A.B., Dartmouth College; LL.B., Harvard University

Associate Professor of Law

THOMAS JOSEPH O'TOOLE, A.B., A.M., LL.B., Harvard University

Associate Professor of Law

ROBERT TRASK MANN, B.S., B.A., LL.B., University of Florida; M.A., George Washington University

Assistant Professor of Law

C. DUANE ALDRICH, S.B., LL.B., Harvard University

Palmer, Dodge, Gardner, Bickford & Bradford

Lecturer in Insurance and Creditors' Rights

KENNETH W. BERGEN, A.B., Rutgers University; LL.B., Harvard University

Warner, Stackpole, Stetson & Bradlee

Director of Taxation Program

GERALD A. BERLIN, B.A., University of Virginia; LL.B., Yale Law School

Muchnick and Bearak

Lecturer in Legal Psychiatry

HOLBROOK CAMPBELL, B.A., University of Virginia; LL.B., Harvard Law School

Palmer, Dodge, Gardner, Bickford & Bradford

Lecturer in Trusts

MARTIN W. COHEN, LL.B., Northeastern University

Gallup & Hadley

Lecturer in Local Government Law and in Evidence

ROLAND A. CORMIER, A.B., Assumption College; LL.B., Georgetown University

Ely, Bartlett, Thompson & Brown

Lecturer in Federal Taxation

- WILLIAM J. CURRAN, LL.B., Boston College Law School; LL.M., Harvard Law School
Counihan & Counihan
Lecturer in Creditors' Rights
- ARTHUR L. ENO, JR., A.B., LL.B., Harvard University
Attorney at Law
Lecturer in Judicial Remedies
- DAVID FLOWER, JR., A.B., LL.B., Harvard University
Tax Attorney, Raytheon Manufacturing Company
Lecturer in Federal Taxation
- JAMES C. GAHAN, JR., A.B., LL.B., Harvard University
Brown, Field & McCarthy
Lecturer in Massachusetts and Trial Practice
- WALTER F. GIBBONS, A.B., Providence College; LL.B., Catholic University
Attorney at Law, Providence, Rhode Island
Lecturer in Taxation of Corporations and Partnerships
- ROBERT G. HENNEMUTH, A.B., Syracuse University; LL.B., Harvard University
Attorney at Law
Lecturer in Conflict of Laws and in Judicial Remedies
- DAVID RICHARD HERWITZ, B.S., Massachusetts Institute of Technology; LL.B., Harvard University
Mintz, Levin & Cohn
Lecturer in Corporate Finance
- MARGRETA A. HUGHES
Librarian
- HERBERT P. KENWAY, B.A., Yale College; LL.B., New York University
Kenway, Jenney, Witter & Hildreth
Lecturer in Patents
- ALLAN ROY KINGSTON, LL.B., Northeastern University
Kingston, Coffin & Jones
Lecturer in Domestic Relations and in Divorce and Separation
- GEORGE E. KINMONTH, JR., B.S., Tufts College; LL.B., Boston University
Attorney at Law, Mystic, Connecticut
Lecturer in Connecticut Practice
- RICHARD H. LEE, A.B., Bowdoin College; LL.B., Harvard University
Lloyd, Lee & Sherman
Lecturer in Probate Practice
- BERTRAM H. LOEWENBERG, A.B., LL.B., Harvard University
Sherburne, Powers & Needham
Lecturer in Corporations
- HENRY F. LONG, Commissioner of Corporations and Taxation of the Commonwealth of Massachusetts
Attorney at Law
Lecturer in State and Local Taxation
- REUBEN L. LURIE, A.B., LL.B., Harvard University
Lurie, Alper & Gorovitz
Lecturer in Criminal Law
- THOMAS H. MAHONY, LL.B., Boston University
Mahony, Bryer, Coffin & Willis
Lecturer in World Organization and International Law

CONRAD W. OBERDORFER, J.U.D., University of Munich; LL.B., Northeastern University; LL.M., Harvard University
Choate, Hall & Stewart
Lecturer in Constitutional Law

W. LANGDON POWERS, A.B., Dartmouth College; LL.B., Harvard University
Sherburne, Powers & Needham
Lecturer in Judicial Remedies

ROBERT D. PRICE, A.B., Cornell University; LL.B., Harvard University
Vaughn, Esty, Crotty & Mason, of Worcester
Lecturer in Tax Problems of the Fiduciary and in Estate Planning

EDWARD LESTER SCHWARTZ, A.B., City College of New York; LL.B., Harvard University
Attorney at Law
Lecturer in Real Property Transactions and in Landlord and Tenant

ROBERT M. SEGAL, A.B., Amherst College; LL.B., Harvard University
Attorney at Law
Lecturer in Administrative Law and in Trade Regulations

WALTER G. SILCOX, B.C.S., M.C.S., LL.B., Southeastern University
Bureau of Internal Revenue
Lecturer in Federal Tax Procedure

FRANK A. SILVER, LL.B., Northeastern University
Attorney at Law
Lecturer in Legal Research

H. PETER SOMERS, B.S., Cornell College; M.A., University of Iowa; LL.B., Harvard University
Hill, Barlow, Goodale & Wiswall
Lecturer in Commercial Law

ROGER A. STINCHFIELD, B.S., Colby College; LL.B., LL.M., Suffolk University
Attorney at Law
Lecturer in Admiralty and Maritime Law

HERMAN STUETZER, JR., A.B., LL.B., Cornell University
Lybrand, Ross Bros. & Montgomery
Lecturer in Legal Accounting and in Excess Profits Tax

ROGER D. SWAIM, A.B., LL.B., Harvard University
Hale & Dorr
Lecturer in Conveyancing

WILLIAM ROSS WHALON, A.B., Harvard University; LL.B., Northeastern University
Gallup & Hadley
Lecturer in Contracts and in Damages

Office Staff

CARMELITA E. GERACI
Registrar and Secretary to the Dean

EILEEN R. KIBRICK
Library Assistant

JEANNETTE PUCKO
Secretary

HERTA VERENAIS
Library Assistant

EDGAR O. KIROUAC
Special Assistant to the Dean

GENERAL INFORMATION

The University

Northeastern University is incorporated as a philanthropic institution under the General Laws of Massachusetts. The State Legislature, by special enactment, has given the University general degree granting powers.

The Corporation of Northeastern University consists of men who occupy responsible positions in business and the professions. This Corporation elects from its membership a Board of Trustees in which the control of the institution is vested.

Founded in 1898, Northeastern University, from the outset, has had as its dominant purposes the discovery of human and social needs and the meeting of these needs in distinctive and highly serviceable ways. While subscribing to the most progressive educational thought and practice, the University has not duplicated the programs of other institutions but has sought "to bring education more directly into the service of human needs."

With respect to program, Northeastern University has limited itself:

- To offering, in its several schools, basic curricula from which non-essentials have been eliminated.
- To effective teaching.
- To advising and guiding students.
- To giving students the chance to build well-rounded personalities through a balanced program of extracurricular activities.

The Northeastern Plan of Education in the undergraduate schools is especially designed for the student who must earn while he learns. In the main, it consists of two definite types of education:

- Co-operative Education by Day.
- Adult Education by Night.

So far as the New England States are concerned, Northeastern University is the only institution whose day colleges, other than the School of Law, are operated under the Co-operative Plan whereby throughout the school year the upperclass students alternate ten-week periods at school with ten-week periods upon jobs in business and industry.

The several schools and programs of the University are conducted either under the name "Northeastern University" or by its affiliated schools — The Lincoln Schools.

The School of Law

Northeastern University School of Law, the first of the several schools and colleges of Northeastern University, was established in 1898. Among its original incorporators were Judge James A. Dunbar, James Barr Ames, then Dean of the Harvard Law School, and Samuel Bennett, at that time Dean of the Boston University School of Law. Later, such men as Ezra Thayer, Dean of the Harvard Law School, Samuel Elder, and Robert G. Dodge have been active in shaping the policies of the School and aiding in its development.

Northeastern University School of Law is now entering upon its fifty-fifth year of instructing and preparing young men and women for the practice of law. Graduates of the School to the number of more than two thousand have become active practicing lawyers in Massachusetts and in the northeastern area of the United States, and many of them have been honored by appointment to the bench and to other positions of public trust and confidence. Upwards of another thousand graduates have used their law training to advance themselves as leaders in the business and industry of the nation.

The purpose of the School of Law is to prepare men and women for the active practice of the profession throughout the common law jurisdictions, more particularly in Massachusetts and the other New England States, and to provide legal training for those who are ambitious to advance themselves in business. The success of the School in achieving this purpose has been due in no small measure to the faculty members who throughout the years have taught at the School of Law. In addition to the full-time teachers, outstanding leaders in the profession and noted specialists in particular fields of the law give special lectures and many of the courses. The School in this manner relates the work of the classroom to the active practice of the profession.

Accreditation

Northeastern University School of Law meets the requirements of the Section of Legal Education and Admissions to the Bar of the American Bar Association and is on the list of approved schools of that body.

The School is a member of the Association of American Law Schools, and it is also registered as an approved school by the Board of Regents of the University of the State of New York.

Location

The School of Law is located at 47 Mt. Vernon Street, on the top of historic Beacon Hill, in Boston. This location has many advantages for

law students. The State House is within two minutes' walk, thus affording ample opportunity to students to observe legislative processes.

Within four minutes' walk is the Suffolk County Court House where the students can observe the judicial process in every aspect. Over ninety per cent of the cases heard by the Supreme Judicial Court are argued here. In the same building there are usually eight or ten jury sessions of the Superior Court conducting both civil and criminal trials. This Court holds equity sessions throughout the year. The Suffolk County Court House also has the Probate Court and the Municipal Court of the City of Boston, both of which handle a large volume of business. The Land Court which administers the Torrens system of land registration conducts its sessions here.

A few blocks farther away is the Federal Court House where are held the sittings of the United States District Court for the District of Massachusetts and the Court of Appeals for the First Circuit.

The School is readily accessible from all parts of metropolitan Boston, being within a few minutes' walk of the Park Street subway station which is the focal point of all rapid-transit and street-car lines serving an area containing two million people.

The School of Law building provides well-equipped classrooms, an ample Library, conference rooms, and offices for instructors and the administrative staff.

Library

The Law School Library contains more than 22,000 volumes and is steadily growing. It is so arranged as to give the student direct access to the books in the stacks as well as in the reading room. The Library contains many of the State reports, the complete National Reporter System, the reports of the Supreme Court of the United States, the Federal Reports, the English reports, Dominion Law Reports, English and American digests, various State digests and statutes, and an extensive collection of encyclopedias, annotations, treatises, legal periodicals, approved textbooks, and all current casebooks. The Library complies in all respects with the requirements of the various accrediting bodies. In addition there is housed in the State House, within two minutes of the School, the State Library, containing some six hundred thousand volumes, which is available to students of the School. In the Federal Court House there is also available to students the Library of the United States Court of Appeals.

ADMISSION OF STUDENTS

Requirements for Admission

A. Candidates for the Degree of Bachelor of Laws (LL.B.):

Men and women eighteen years of age or over who have satisfactorily completed at least three-quarters of the work required for an acceptable college degree at an accredited college and have attained records therein which meet the standards set by the Committee on Administration will be admitted as candidates for this degree.

Two-year prelegal students: — A limited number of students who have completed only one-half of the work required for an acceptable college degree at an accredited college and have attained records therein which meet the standards set by the Committee on Administration will also be admitted as candidates for this degree. Such students, however, must complete a special required program equivalent to four years of day law study. This special program is described at page 20. The School of Law will offer programs both for the prelegal student who has three or more years of college work (who will need only three years of law study) and also for the prelegal student who has only two years of college work (who will need four years of law study).

A student transferring from any law school which is approved by the American Bar Association or is a member of the Association of American Law Schools and who has maintained a satisfactory academic record may be admitted to advanced standing on such terms and conditions as the Committee on Administration may prescribe. Transcripts showing both college and law school work must be submitted with the application. Successful completion in residence of at least one full academic year of study is required for the degree.

B. Undergraduate Special Students:

A limited number of applicants, who are at least twenty-three years of age and who cannot qualify under the foregoing requirements for admission as candidates for the degree of Bachelor of Laws, but who are eligible to take the bar examination in their own state, may, in exceptional cases and at the discretion of the Committee on Administration, be admitted as special students. Applicants for admission as special students must give evidence of such general education and experience as will enable them to carry on and profit by the work of the School.

C. Candidates for the Degree of Master of Laws (LL.M.):

Men and women who have been admitted to the bar or who have

obtained the degree of Bachelor of Laws or an equivalent degree from an approved law school may, at the discretion of the Committee on Administration, be admitted to the Master's course as candidates for the degree of Master of Laws, or they may be admitted as special students and enroll in individual courses as desired.

D. Candidates for the Degree of Master of Laws in Taxation:

Students otherwise qualified as candidates for the Master's course may elect to pursue the degree with specification in Taxation.

E. Special Graduate Students:

Men and women who have been admitted to the bar or who have obtained the degree of Bachelor of Laws or an equivalent degree may, at the discretion of the Committee on Administration, be admitted to take courses without credit towards a degree.

Readmission

Former students are readmitted only at the discretion of the Committee on Administration and must upon their return to the School meet the degree requirements in force at the time of their re-entry. The Committee on Administration reserves the right to refuse admission or re-admission to any applicant.

Application for Admission

Entering students in the undergraduate division may enroll only in the fall semester. Applications for admission should be made as early as possible *before the starting date*.

Candidates for admission to the School of Law should observe the following procedure:

1. The candidate should obtain from the office of the School of Law, 47 Mt. Vernon Street, Boston 8, Massachusetts, an application form which shall be filled out completely and returned to that office accompanied by an application fee of five dollars. Checks and money orders should be made payable to Northeastern University.

2. The application for admission shall be accompanied or followed by an official transcript of the applicant's academic record at each college and professional school which he has attended prior to making such application.

3. The applicant must also submit at least two letters addressed to the Dean by persons not members of applicant's family testifying to the applicant's intelligence, industry, and good character. It is helpful to include a letter from the dean or some teacher of his school or college.

4. Upon receipt by the applicant of notice of the acceptance of his application, he shall register in person at the School of Law during or before the registration period indicated in this catalog. A fee of two dollars will be charged for late registration.

5. The Committee on Administration reserves the right to refuse admission to any applicant.

Registration

Every student, whether an entering student or an upperclassman, is required to register in person before the opening of each term and at that time to arrange for the payment of tuition. *The filing of an application does not constitute registration.*

Prelegal Program

Students desiring to study law but who have not completed at least one half the work required for a Bachelor's degree in an accredited college should write to or consult the Director of Admissions for Northeastern University, whose office is located in Richards Hall, 360 Huntington Avenue, Boston 15.

The College of Liberal Arts of Northeastern University conducts both day and evening prelegal programs which prepare adequately for admission to the School of Law.

The Faculty of the School of Law does not require that applicants for admission shall have pursued any specific course of study, or completed any prescribed subjects. The intending law student is urged, however, to lay especial emphasis on studies in English and English composition; in history, particularly the history of English and American governments and institutions; in accounting; and in the social sciences. The practice of law covers a field so wide and the needs of the individual students vary so greatly that it is impossible to prescribe any rigid undergraduate program which should be pursued by a student intending to study law. Any academic work thoroughly done will be of service.

Tuition and Fees

The following schedule of tuition charges is currently effective.

APPLICATION FEE	\$5.00
---------------------------	--------

Each student is required to pay an application fee when he first enters the University. It is payable but once and is not refundable.

TUITION CHARGE FOR ALL STUDENTS..... \$16.00

This charge for tuition shall be applicable to all students, whether regular, special, or unclassified, and irrespective of whether they are enrolled in the Day Division, Evening Division, or Graduate Division, or any combination thereof.

The tuition charge for each term is payable in two equal instalments which are due on the following dates:

Summer Session, 1952

- First tuition instalment due June 23, 1952
- Second tuition instalment due July 28, 1952

Fall Term, 1952

- First tuition instalment due September 15, 1952
- Second tuition instalment due November 10, 1952

Spring Term, 1953

- First tuition instalment due January 19, 1953
- Second tuition instalment due March 16, 1953

MASTER'S THESIS FEE..... 40.00

The thesis fee for a graduate student is \$40 payable upon approval of the student's thesis topic.

SPECIAL EXAMINATION FEE..... 10.00

POSTPONED EXAMINATION FEE..... 5.00

LIBRARY FEE (each term)..... 5.00

LIBRARY FEE (summer session)..... 2.00

LATE REGISTRATION FEE..... 2.00

A late registration fee is charged to students who register in courses for credit after the close of the first week of any term.

DEFERRED PAYMENT FEE..... 2.00

The deferred payment fee will be added to all bills which are not paid when due. Failure to make the required payments on time, or to arrange for such payments, is considered sufficient cause to bar the student from classes until the matter has been adjusted with the Dean.

GRADUATION FEE..... 15.00

This fee is payable thirty days before the student is to be recommended for the degree.

Scholarships and Prizes

Faculty Scholarships. The University has made available five cash scholarships of \$100 each in honor of former distinguished members of

the Faculty of the School of Law: Arthur A. Ballantine, Esquire, of the firm of Root, Ballantine, Harlan, Bushby & Palmer, New York; the late Elias Field, Esquire, formerly of the firm of Brown, Field & McCarthy, Boston; Honorable Hugh D. McLellan, formerly Justice of the District Court of the United States for the District of Massachusetts, now of the firm of Herrick, Smith, Donald, Farley & Ketchum, Boston; Oscar Storer, Esquire, of the firm of Storer & Lucas, Boston; and Honorable John V. Spalding, Associate Justice of the Supreme Judicial Court of Massachusetts. These scholarships are awarded to second-year students on the basis of their academic record during the first year and promise of future success.

Honor Scholarships. A \$50 scholarship is awarded annually to the member of the third-year class in the Day Division and to the member of each of the third and fourth year classes in the Evening Division who received the highest scholastic average in his class for the preceding academic year. Two \$25 scholarships are awarded annually to the two members of the third year class in the Day Division and to the two members of each of the third and fourth year classes in the Evening Division ranking next in honor to the students receiving the \$50 awards.

The *Faculty Scholarships* and the *Honor Scholarships* are awarded in October or November of each year and only to a student who has enrolled for his next year of study. In the event a student has not enrolled for the ensuing year, the next highest ranking student will receive the award.

Daniel F. Dowd Scholarship. This scholarship, in the principal sum of \$1,000, is the gift of a friend of the Law School in memory of a worthy citizen of the State of Vermont. The income from this fund is available to provide a scholarship or prize for such worthy and needy student as the Dean of the School of Law shall select, preference being given to (1) residents of Windsor County, Vermont, (2) residents of the State of Vermont, and (3) other students.

Law Week Award. The editors of *The United States Law Week* have established an award, consisting of a year's free subscription to *Law Week*, for that member of the graduating class of Northeastern University School of Law who is adjudged by the Faculty to have made the most satisfactory progress during his final School year.

Kappa Beta Pi Award. The Beta Epsilon Chapter of Kappa Beta Pi Legal Sorority offers a prize consisting of one or more law books to the woman student who, in the opinion of the Dean of the School, is most deserving. No student may receive the award in two consecutive years.

Honor Awards, 1951

Faculty Scholarships:

EDWARD K. DABROWSKI	SUMNER L. LIPSKY
HAROLD HURST	FRANCIS D. PIZZELLA
ROBERT P. TOLAND	

Honor Scholarships:

HARRY L. BARRETT	WALLACE R. MCPHEE
CORINNE P. GRANDE	ROBERT E. MEYER
EDMUND S. LEE, III	SUMNER D. MEYERS
MELVIN F. LEE	NATHAN PASS
DEAN A. WILKINSON	

Moot Court — Winners of Hendrick Memorial Cup (Boston, November, 1951) and representatives in the National Moot Court Competition (New York, December, 1951):

CORINNE P. GRANDE	DEAN A. WILKINSON
SUMNER D. MEYERS	

Law Club Awards (for excellence of briefs):

MELVIN F. LEE	ROBERT P. TOLAND
WALLACE R. MCPHEE	MYRON F. TUROSZ

Daniel F. Dowd Scholarship

EUGENE F. CABLE

Kappa Beta Pi Award

CORINNE P. GRANDE

Law Week Award

JOSEPH L. HEALY

Winners for Best Legal Memoranda (first year students):

CHARLES E. BLACK	RICHARD L. ENGLANDER
WILLIAM S. DEMAKIS	PAUL C. GAY
ALBERT E. EDWARDS	EWELL R. MCCRIGHT
DONALD L. ELLISON	JOHN V. RAUSEO
ERNEST F. ROBERTS, JR.	

EDUCATIONAL PROGRAMS

Day Division

The completion of the course of study leading to the degree of Bachelor of Laws in the day curriculum requires that students shall be in regular attendance for three full academic years and that they shall devote substantially all of their working hours to their law studies. A minimum of seventy-six semester hours of academic credit is required for graduation. Students admitted to the School with prelegal credit of less than three-quarters of the requirement for a college degree must meet the requirements of the special "Four Year Program" set forth in the second following paragraph.

Evening Division

The evening Law School course leading to the degree of Bachelor of Laws covers a period of four school years and is equivalent in content and the number of classroom hours to the day program. At the option of the student the evening Law School program may be spread over a period of five years. The evening program is intended primarily for those who are employed during the day. Evening students admitted to the School with prelegal credit of less than three quarters of the requirement for a college degree must meet the requirements of the next paragraph.

Four Year Program

Students entering the School of Law with less than three years of acceptable prelegal work must complete a four-year day program (or the equivalent work in the evening curriculum) in order to be eligible for the degree of Bachelor of Laws. Such students must complete a program providing for a minimum of one hundred one semester hours of academic credit, including the fifty-five hours of required courses listed at pages 26 and 27, and also including the following as additional required courses: One seminar; the course in Constitutional Law; a course in Jurisprudence or Legal History; a Legal Clinic course; and also a course in Accounting, unless that subject was taken and passed before admission to the School of Law.

Students taking this four-year program in the evening curriculum will be required to attend the School for a minimum of five academic years.

Graduate Division

The program leading to the degree of Master of Laws can be completed in a period of from one to three years. It has been designed with the twofold purpose of enabling graduates of approved law schools to obtain the degree of Master of Laws, and also of affording active prac-

tioners an opportunity for advanced study in order to enhance their professional effectiveness.

The requirements for admission to the *Graduate Division* are set forth on page 14, and the requirements for the Master of Laws degree appear on page 24 of this catalog. For further details, see the special *Graduate Division* folder which will be mailed on request.

Summer Session

During the summer of 1952 a ten-week evening session will be conducted with courses for upperclass students and graduates. Credits earned in this session will be counted towards a candidate's degree. Anyone interested in attending may write or phone the School for a copy of the Summer Session Bulletin which contains full details.

Combined Programs

Students in the College of Liberal Arts and the College of Business Administration of Northeastern University in their senior year may elect courses in the School of Law in lieu of the regular senior programs of these colleges.

Upon satisfactory completion in the School of Law of the first year Day program, such students then become eligible for the degree of Bachelor of Arts or of Bachelor of Science according to the curriculum in which they have qualified. Upon the completion of their law studies in the School of Law, they also become eligible for the degree of Bachelor of Laws.

These combined programs shorten the time required to obtain both degrees and also the time required to qualify for admission to the practice.

Method of Instruction

The purpose of the School of Law is to develop an intelligent student into a person capable of handling the various legal problems which may be brought to him. This objective is accomplished by admitting only those students whose educational preparation indicates that they can become competent lawyers, either in the professional field or in their own businesses, and then by working with these students through four processes:

(1) *The Case Method of Instruction* — The student is taught to read and use the written opinions of the appellate courts by which the final judgments in litigation are stated and explained. The close study of actual cases trains the students to analyze facts and to reason rigorously. Thus are developed skills which can be used to handle new factual problems with competence.

(2) *The Basic Principles of Law* — The student is taught the important principles of law arising in the fields of contracts, torts, criminal law and other basic subjects. These fundamental principles of legal rights and remedies are brought into use as new situations are presented.

(3) *How to Find the Law* — The solution of many of the cases which come to a lawyer requires elaborating upon these basic principles learned in the law school, and this must be done through the lawyer's knowledge of *how to find* the law. Therefore the student is taught to use the reports, digests, statutes and other books found in the law library.

(4) *Law Clubs and Legal Research* — The student must be told about and then given experimental practice in understanding evidence, presenting his case in court, and using the other procedures by which a competent lawyer protects his clients in their rights.

At Northeastern University School of Law the development of the student through these four steps is under the supervision of experienced law professors and of lecturers who have been selected from the active profession by reason of their successful practical experience and for their ability to pass their knowledge on to the students of the School of Law.

Legal Research

For the purpose of bringing the academic study of the law into closer relation to the needs of active practitioners, Northeastern University School of Law has established an enlarged and integrated program affording training in research and in the various kinds of legal composition.

The course in Legal Bibliography, given in the first year, introduces the student to the use of law books. A memorandum of law is prepared which necessitates knowledge of the characteristics of the sets of books which lead the lawyer to the cases governing his problem. Some analysis of these cases is required to produce an acceptable memorandum.

In subsequent years, in the course on Legal Research, the student prepares a comment on a recent decision, two trial memoranda, and one brief in a case to be heard in the Supreme Judicial Court. These projects involve further practice in finding the law and intensive training in analyzing it. The trial memoranda and the brief are prepared for practicing attorneys in connection with actual cases. Thus the student gets some contact with the realities of practice that are not obtainable in research alone. The cooperating attorneys explain their cases to the students and criticize their work constructively.

An important part of this co-ordinated program is provided by the law clubs which have been established in both the Day and Evening Divisions. Through the law clubs the students are given practical in-

struction and experience in the analysis of legal problems, in the use of legal materials, in the preparation and presentation of cases before the appellate courts, and in the written expression of legal arguments. The clubs, each of which is composed of eight to a dozen men from each class, start their work shortly after the beginning of the school year. The students first argue cases within their own clubs. Later a series of inter-club contests is scheduled. The competitive program is concluded by final arguments between the successful clubs of the Day and Evening Divisions.

Faculty Advisers

The students are encouraged to take up their problems with the members of the full-time Faculty. These personal conferences, either on legal matters or other problems, can assist students in orienting themselves to the study of law and to the continuous and arduous efforts needed if the Law School work is to be completed successfully. For this purpose each student is assigned to a certain member of the full-time Faculty.

REGULATIONS OF THE SCHOOL OF LAW

General Policy

The School reserves the right, at any time, to make any changes which are deemed advisable in the number and content of courses, their order in the curriculum, the instructors assigned to courses, and in the rules, regulations and fees of the School.

Attendance at the School of Law is a privilege and not a right. The Committee on Administration reserves the right to require at any time the withdrawal of any student whom it may deem unworthy either on account of his neglect of study, his nonattendance at classes, his incapacity for the law, or for any grave defect of conduct or character, and no reason for requiring such withdrawal need be given.

Withdrawals

In the event any student is obliged to withdraw from the School for causes deemed adequate by the Committee on Administration, tuition may be refunded in accordance with the following schedule of *attendance* and *refund*: Two Weeks, 80 per cent; Three Weeks, 60 per cent; Four Weeks, 40 per cent; Five Weeks, 20 per cent; Over Five Weeks, 0 per cent.

Attendance

Students are expected to attend with regularity the sessions of all courses in which they are enrolled. Students who are irregular in class attendance without justifiable cause may be dropped from the class rolls or be refused permission to take the final examinations in the course.

No student during his attendance at the School of Law may be registered in any other school or college, whether of Northeastern University or of any other institution, without the consent of the Dean.

Marking and Promotion System

A student's scholastic standing is determined solely by his weighted average calculated upon the grades in all courses taken since entering the School, weighted in accordance with the semester hours devoted to each course. The quantitative unit in determining credits is the semester hour, which is equivalent to one hour in class each week for one semester.

The regulations regarding notebooks, examinations, methods of grading, promotion and graduation are set forth in detail in the special rules issued from time to time by the Faculty. A copy of these special printed rules and regulations can be obtained upon request to the Registrar.

Requirements for the Degrees

The degree of Bachelor of Laws will be conferred upon those candidates who are of good moral character and who

- (1) Have pursued in residence the study of law for the required period of time and have completed the program of study prescribed by the Faculty; and
- (2) Have passed examinations in at least seventy-six semester hours of courses — or one hundred one semester hours of courses in the four-year program — and have attained a minimum weighted average of sixty-eight per cent.

In recognition of superior scholarship, the degree will be granted with special honors, as follows: *Cum Laude*, to students who have met all of the requirements for the degree and have attained a weighted average of eighty per cent to eighty-five per cent; *Magna Cum Laude*, to students who have met all the requirements for the degree and have attained a weighted average of eighty-five per cent to ninety per cent; *Summa Cum Laude*, to students who have met all the requirements for the degree and have attained a weighted average of ninety per cent or better.

The degree of Master of Laws will be conferred upon those candidates who are of good moral character and who

- (1) Have completed not less than twenty-four semester hours of courses prescribed by the Committee on Administration, including the course on *Jurisprudence and Legal History*, and have attained a minimum weighted average of eighty per cent or better; and
- (2) Have presented a legal thesis, complying with the requirements stated below, written under the direction of and satisfactory to the Faculty; and
- (3) Have been recommended for the degree of MASTER OF LAWS by the Committee on Administration.

The thesis required of candidates for the degree of MASTER OF LAWS shall be based upon original research and upon a subject approved by the Faculty as one worthy of the graduate degree. The work required of the student in preparation of his thesis must be at least equivalent to the work required to obtain three semester hours of credit in a graduate course. Two typewritten copies, in final form, must be submitted not later than two months before the degree is to be awarded.

The degree of Master of Laws in Taxation will be conferred upon those candidates who have met all the above requirements, and whose work has included a minimum of twelve hours of tax courses in the twenty-four hours of required graduate work, and whose thesis subject is in the field of taxation.

DAY CURRICULUM 1952-1953

First Year			
<i>First Semester</i>	<i>Hours</i>	<i>Second Semester</i>	<i>Hours</i>
Contracts	3	Contracts	2
Property	3	Property	3
Torts	2	Torts	3
Judicial Remedies	2	Judicial Remedies	2
Legal Bibliography	1½	Moot Court	1½
Criminal Law	2	Agency	3
	12½		13½
Second Year			
Equity	2	Equity	2
Commercial Law	2	Commercial Law	2
Real Property Transactions	2	Real Property Transactions	2
Moot Court	1½	Moot Court	1½
Domestic Relations	2	Legal Research	1
Electives	5	Electives	4
	13½		11½
Third Year			
Trusts	2	Trusts	2
Corporations	2	Corporations	2
Evidence	2	Evidence	2
Legal Research	1	Electives	6
Electives	6		
	13		12
Elective and Graduate Courses			
<i>Group A</i>			
Constitutional Law	2	Constitutional Law	2
Federal Taxation	3	Federal Taxation	2
Mass. and Trial Practice	2	Mass. and Trial Practice	2
Conflict of Laws	2	Conflict of Laws	2
Labor Law	3	Creditors' Rights	2
<i>Group B</i>			
Probate Practice	2	Estate Planning	2
Administrative Law	3	Federal Jurisdiction	3
State and Local Taxation	2	Federal Tax Procedure	2
Tax Problems of Fiduciaries	2	Taxation of Corps. and Parts.	2
Legal Accounting	2	Divorce and Separation	1
Legal Ethics	1	Jurisprudence	2
Seminar on Excess Profits Tax	2	Landlord and Tenant	2
Seminar on Constitutional Law Problems	2	Business and Family Transactions	2
		Seminar on Legal Psychiatry	2
<i>Group C</i>			
Trade Regulations	2	Insurance	2
Conveyancing	2	Future Interests	3
Patents	2	Corporate Finance	2
Seminar on Tax Problems of Insurance and Pensions	2	Seminar on Labor Law	2
Legislation	2	Admiralty	2
Damages	2	Local Government Law	2
World Law	2	Social Legislation	2
		Taxation of Real Prop. Trans.	2

EVENING CURRICULUM 1952-1953

First Year		Second Semester	
<i>First Semester</i>	<i>Hours</i>		<i>Hours</i>
Contracts	3	Contracts	2
Property	3	Property	3
Torts	2	Torts	3
Judicial Remedies	2	Judicial Remedies	2
Legal Bibliography	$\frac{1}{2}$	Moot Court	$\frac{1}{2}$
	<hr/> 10 $\frac{1}{2}$		<hr/> 10 $\frac{1}{2}$
Second Year			
Criminal Law	2	Agency	3
Equity	2	Equity	2
Commercial Law	2	Commercial Law	2
Real Property Transactions	2	Real Property Transactions	2
Moot Court	$\frac{1}{2}$	Moot Court	$\frac{1}{2}$
Domestic Relations	2		
	<hr/> 10 $\frac{1}{2}$		<hr/> 9 $\frac{1}{2}$
Third Year			
Trusts	2	Trusts	2
Corporations	2	Corporations	2
Legal Research	1	Electives	4
Electives	5		
	<hr/> 10		<hr/> 8
Fourth Year			
Evidence	2	Evidence	2
Legal Research	1	Electives	6
Electives	6		
	<hr/> 9		<hr/> 8
Required Courses (15)		55 Semester Hours	
Elective Courses		21 Semester Hours	
Required for the Degree		76 Semester Hours	

The evening curriculum includes the same elective courses as the day curriculum. See opposite page.

The elective and graduate courses in *Group A* will be offered every year, with day and evening classes. The classes in *Group B* will be offered in the academic year 1952-53, with late afternoon or early evening classes. The courses in *Group C* will not be offered in the academic year 1952-53, but will be available in summer sessions or in subsequent years.

The choice of elective courses must be approved by the student's Faculty Adviser.

DESCRIPTION OF COURSES

Administrative Law

Three semester hours

The constitutional problems involved in the creation of agencies to administer law. The method of statutory creation and the manner in which some of the more important of these agencies function. Rule making powers. Problems dealing with adequate notice and fair hearing (evidence and procedure, type of tribunal and necessity of findings). The nature and scope of control by courts over administrative determinations. Attention throughout the course will be directed to the Administrative Procedure Act and Massachusetts cases involving administrative agencies. Mr. Segal.

Admiralty and Maritime Law

Two semester hours

Federal and State jurisdiction. Jurisdiction over waters, craft, contracts, torts, and crimes. Maritime liens; and rights of maritime workers. Carriage of goods. Charter parties; salvage; general average; marine insurance; pilotage; towage; collision, and limitation of liability; pleading and procedure. Mr. Stinchfield.

Agency and Partnership

Three semester hours

Rights and liabilities arising out of the relation of *principal and agent* and *master and servant*. Creation, nature and characteristics of *partnership*. Professor Roitman.

Commercial Law

Four semester hours

A consideration of common commercial transactions in their practical setting. Includes the law relating both to the sale of personalty and to the commercial paper used for payment and security in such sales. Mr. Somers.

Conflict of Laws

Four semester hours

The law governing activities that have connections in more than one state. Domicil. The bases for jurisdiction. The conflict rules applicable to problems involving the enforcement of foreign judgments, contracts, torts, taxation, property, marriage and divorce, and the administration of estates; with emphasis upon constitutional limitations. Mr. Hennemuth.

Constitutional Law

Four semester hours

Judicial function and technique in constitutional litigation. The commerce clause as a source of federal authority and as a limitation on state power. Due process of law, procedural and substantive. Professor O'Toole.

Contracts

Five semester hours

Rights and duties arising from promises. The study of the general transaction (contract) of which the promise is a part. Requisites for the creation of the contract-promise; performance and discharge of contracts; and the parties to the making, performance and enforcement of contracts. Methods and measures of judicial relief. Mr. Whalon.

Conveyancing*Two semester hours*

A course in practical conveyancing. Agreements for purchase. Evidence of title. Deeds. Mortgages. Assignments. Partial Releases. Extensions. Discharges and Foreclosures of Mortgages. The recording and registration of title systems. *Prerequisite:* A course or practical experience in the field of conveyancing. Mr. Swaim.

Corporate Finance*Two semester hours*

A study of the law relating to the capitalization and the financial operations of corporations. Judicial and administrative requirements concerning valuation and accounting, corporate merger, consolidation, purchase and sale of assets, holding company relationships, recapitalizations, administration of surplus, and stockholder distributions. Mr. Herwitz.

Corporations*Four semester hours*

The formation, promotion, organization, management, and control of corporations, including the problems arising under common law and modern statutes concerning corporate powers and their distribution among shareholders, directors, officers and agents. The creation, maintenance and change of corporate capital. Mr. Loewenberg.

Creditors' Rights*Two semester hours*

Jurisdiction in bankruptcy; adjudication; administration; discharge. Emphasis is placed on fraudulent conveyances, preferences, claims of creditors, and discharge. Corporate reorganizations, and arrangements. Consideration is given to non-bankruptcy liquidations, including assignments for the benefit of creditors. Dean Crane. Mr. Aldrich. Mr. Curran.

Criminal Law*Two semester hours*

A preliminary study of the administration of criminal justice, with special reference to characteristics of particular crimes and the general principles of liability to punishment. Mr. Lurie.

Damages*Two semester hours*

Normal measure of damages in tort and contract; compensatory and punitive awards; avoidable consequences; measure and amount in specific torts and contracts; liquidated damages. Persons liable and persons entitled to recover. Procedural aspects of recovery: pleading, evidence, assessment. Mr. Whalon.

Divorce and Separation*One semester hour*

Nature and requirements of marriage. Relations between husband and wife. Dissolution of marriage by annulment or divorce. Separate support, and decrees for living apart. Premarital contracts; separation agreements. Practice and procedure in the Probate Court. *Prerequisite:* This course is limited to members of the bar. Mr. Kingston.

Domestic Relations*Two semester hours*

The law of husband and wife: the contract to marry; nature and requirements of marriage; relations between husband and wife; dissolution of marriage by annulment, divorce and judicial separation. The law of parent and child. Professor Roitman.

Equity*Four semester hours*

Origin and history of the jurisdiction of the court of chancery. Nature, enforcement and effect of equitable decrees. A study of specific enforcement of contracts, injunctions against tort and crime, and other forms of equitable relief. Dr. Hadley.

Estate Planning*Two semester hours*

Estate Planning, a new field of law, embraces the counseling of estate owners and the preparation of necessary legal instruments, to ensure the maximum enjoyment of property. Course includes lectures on estate-planning aspects of wills, trusts, insurance, and taxation (inheritance, estate, gift, and income). Mr. Price.

Estates and Trusts*Four semester hours*

In this course the student will cover gift transactions, both *inter vivos* and testamentary, and will also cover intestate succession. *Wills*: testamentary capacity; execution, revocation and contest; administration and management of estates, and accounting. *Trusts*: creation, administration and termination; rights and liabilities of parties; charitable, resulting and constructive trusts. There will also be emphasis upon probate procedure and problems of administration. Mr. Campbell.

Evidence*Four semester hours*

Evidence in trials at common law and in equity. Remoteness and prejudice. Examination, competence, and privilege. Exclusionary rules. Introduction of writings. Parol evidence rule. Dean Crane. Mr. Cohen.

Federal Jurisdiction*Three semester hours*

Jurisdiction and procedure in federal courts; diversity of citizenship; and jurisdiction and amount. Removal jurisdiction and procedure. Concurrent jurisdiction of state and federal judicial systems. Substantive law applied in the federal courts. Procedure under the Federal Rules of Civil Procedure: venue, process, parties, joinder, pleadings, motions, and trials. Appellate jurisdiction and procedure in the Court of Appeals and the Supreme Court of the United States. Professor Roitman.

Federal Taxation*Five semester hours*

The problems involved in the federal taxation of individuals and business associations. Special consideration will be given to the estate, gift and income taxes, and the manner in which they interrelate in the taxation of individuals, trusts and business associations. Study of the structure of the present Internal Revenue Code, regulations, and other administrative and judicial interpretations thereof. Procedure in the courts and before administrative officers. Mr. Flower. Mr. Cormier.

Federal Taxation of Corporations and Partnerships *Two semester hours*

Taxation of corporations and partnerships under the Federal Income tax laws, including consideration of current corporate and partnership income tax problems such as capital readjustments, reorganizations, distributions to shareholders and partners. *Prerequisite*: The course in *Federal Taxation*, or its equivalent. Mr. Gibbons.

Federal Tax Procedure*Two semester hours*

Organization of the Bureau of Internal Revenue, and practice before its administrative units. Returns, assessment, and collection of tax; Statute of Limitations; waivers; deficiency determinations; overpayments, overassessments, refunds; penalties. Criminal prosecution. Settlement negotiations; offers in compromise; closing agreements; transferee liability. Jurisdiction of federal courts in tax litigation. Pleading and practice before the Tax Court. Suits for recovery and refund. Appellate review of decisions. *Prerequisite:* The course in *Federal Taxation*, or its equivalent. Mr. Silcox.

Future Interests*Three semester hours*

Reversions, remainders and executory interests at common law and under modern legislation. The creation and execution of powers of appointment. The construction of limitations, particularly of class gifts. The nature and application of the rule against perpetuities, and related rules. Professor Mann.

Insurance*Two semester hours*

The concept of insurable interest in property, liability and life insurance. The important aspects of policy writing, including warranties, representation, concealment, and waiver. Regulation of the insurance business by government. Dean Crane. Mr. Aldrich.

Judicial Remedies*Four semester hours*

An introduction to the study of Anglo-American Law, with emphasis upon pleadings and procedure. The sources of American Law. The methods employed in using the materials of the profession. The forms of action. Pleadings. Trial and Adjudication. Appellate review. Judgments. Dean Crane. Mr. Powers. Mr. Eno.

Jurisprudence and Legal History*Two semester hours*

Study and comparison of the world's developed systems of law. The machinery of justice, the social interests recognized and protected, salient geographical and other facts shaping law, and important theories as to the nature and purpose of law, in each legal system and in important periods thereof. Chief attention is given to the Anglo-American legal system. This course will be limited to Graduate students. Dr. Hadley.

Labor Law*Three semester hours*

Problems relating to labor organizations and collective bargaining, including legal aspects of various forms of concerted activity such as strikes, picketing, and related activities. The labor injunction, including federal and state anti-injunction statutes. Administration and application of the Labor-Management Relations Act of 1947 and related statutes. Legal aspects of the collective labor agreement. The regulation of labor unions. Emphasis on recent cases and legislation. Professor Roitman.

Landlord and Tenant*Two semester hours*

A course for lawyers covering landlord-tenant relationship in general and the legal situations which arise between the parties. The standard form of lease and all its provisions will be covered. A substantial amount of drafting of leases will be required. Mr. Schwartz.

Legal Accounting*Two semester hours*

The basic patterns of business, corporate and tax accounting. Accounting principles and procedures and statements. Cases in which accounting problems have been presented in court. Designed for students with no previous accounting background. Mr. Stuetzer.

Legal Ethics*One semester hour*

Course based upon the Code of Ethics adopted by the American Bar Association. It covers all of the phases of the obligations of an attorney, including the relations between attorney and client, the attorney and the courts, the attorney and other members of the profession, and the attorney's duties to the public. Practical applications in case study.

Legal Research*Four semester hours*

This required four-hour course includes legal bibliography, research, drafting, and participation in the Law Club programs. The study and work are spread throughout the curriculum, but with special emphasis during four semesters. See page 22 for detailed description of the course. Facility in legal drafting, and in legal research, analysis, organization and composition must be demonstrated before credit for the course is earned. Dean Nicholson.

Legislation*Two semester hours*

Legislative organization; legislative and rule-making procedure, as compared with adjudication; formulation of policy; analysis of the types and elements of statutes; drafting problems. Professor Roitman.

Local Government Law*Two semester hours*

Types of local government and their relationship to the state; legal problems concerning organization and changes; local lawmaking; legal responsibility of local government units; finance and personnel problems. Mr. Cohen.

Massachusetts and Trial Practice*Four semester hours*

Divisions of courts in Massachusetts and jurisdiction of each. Venue. Commencement of actions; attachments; pleadings; discovery before trial: interrogatories and depositions; set-off and recoupment; costs: tender, offer of judgment, and notice to admit facts. Trial procedure; the application of pleadings to the trial; interrogation of witnesses; requests for rulings, and for instructions to jury; motions for directed verdict; motions for new trial. Appeals; exceptions; reports and reservations. Preparation of record for Supreme Judicial Court. Preparation and presentation of trial and appellate arguments. Mr. Gahan.

Moot Court*Two semester hours*

In the first two years of study all students are required to complete the first semester legal bibliography and legal research work, and to participate in three Law Club arguments. This is part of the required research program in the School of Law. For further description see Legal Research, above.

Patents*Two semester hours*

Substantive patent law. Historical origin and philosophy of the patent system; property in patented and unpatented inventions. Requisites of patentable invention; patent claims and infringement; reissues, disclaimers; patent licenses and the effect of the anti-trust laws. The trial of a patent suit. This course is intended to provide the substantive foundation upon which students can later build for practice before the Patent Office or before the courts. Patent Office practice is not included. Mr. Kenway.

Probate Practice*Two semester hours*

A practical course in probate law and procedure, embracing the study of important statutes, court rules, decisions, and points of practice. Course includes lectures on inheritance and estate taxes and on probate accounting. Mr. Lee.

Property*Six semester hours*

A consideration of the basic principles of property law, including a study of the concept of possession, the doctrines of title applied to bona fide purchases of personal and real property, the historical development of estates in land and methods of transferring them, rights and duties involved in the ownership of land, landlord and tenant relationships, and the development of public control over land. Professor Mann.

Real Property Transactions*Four semester hours*

The important types of interests in land, and the legal aspects of the purchase, sale, mortgage, and leasing of land. *Conveyances*: agreements of purchase, examination of title, the formal requirements of deeds, recording. *Mortgages*: the theories and elements of a mortgage, assignment, foreclosure, priority and marshalling, discharge. *Landlord and tenant*: the landlord-tenant relationship in general and the legal situations which arise between the parties; forms of leases; use and occupancy remedies. Mr. Schwartz.

Social Legislation*Two semester hours*

Legal developments and materials in social security systems, including old age and survivors' insurance, workmen's compensation, unemployment insurance, and public assistance programs for needy, blind, and other handicapped persons. Emphasis is placed on the practical aspects of these problems. Professor Roitman.

State and Local Taxation*Two semester hours*

The problems involved in state (especially Massachusetts) taxation of individuals, business associations, and property. Special consideration will be given to inheritance and income taxes, the taxation of corporations and business associations, and the system of taxation upon real estate and personal property. The correlation between the state taxes and corresponding federal taxes. Procedure before state officers and the Appellate Tax Board. Mr. Long.

Taxation of Real Property Transactions*Two semester hours*

Methods of holding and operating real estate; taxation strategy and husband and wife ownership. Possible gift, estate and income taxation consequences. Real estate and federal taxation from the conveyancer's point of view. Proper drafting of documents, recognition of gain or loss on sales and exchanges; limitations thereon. When gain or loss reportable. Sales on terms, lapsed options and fortified installments; sales and lease backs. Mr. Young.

Tax Problems of the Fiduciary*Two semester hours*

Income, estate and gift tax problems incident to the creation and administration of trusts and estates, including consideration of the new "marital deduction." *Prerequisite:* The course in *Federal Taxation*, or its equivalent. Mr. Price.

Torts*Five semester hours*

Intentional injuries to the person, land, and chattels; conversion. Consent; privilege. Negligence; causation; risk. Contributory negligence. Liability without fault. Misrepresentation. Defamation. Malicious prosecution. Abuse of process. Interference with advantageous relations. Professor O'Toole.

Trade Regulations*Two semester hours*

The significant developments, common law and statutory, in the formulation of national policy with respect to the regulation of business, with detailed consideration of the Sherman Act, the Clayton Act, the Robinson-Patman Act and the Federal Trade Commission Act, with emphasis on State developments. Mr. Segal.

Trusts*Four semester hours*

The creation, administration, and termination of trusts. The rights and liabilities of parties with respect to express, resulting, and constructive trusts. Dean Nicholson. Mr. Campbell.

World Organization and International Law*Two semester hours*

The course will take up international law as now understood and applied, also some of the historical and philosophical backgrounds of international law, jurisprudence and other factors affecting international law, the development of international and world law, including the Nuremburg trials, previous and present attempts and efforts at world government, jurisprudence, philosophy and geopolitics as they affect world organization. The purpose of the course is primarily to direct thought to the future development rather than to past precedent in the fields of international law, world law and world organization. Mr. Mahony.

Seminar Courses

Planning for Business and Family Transactions *Two semester hours*

Tax and other considerations affecting form of carrying on a closely-held business and the sale and purchase of such a business; income, gift, and estate tax aspects of gifts and transfers within a family group, including marriage, separation, and divorce agreements. *Prerequisite:* A course in *Federal Taxation* or its equivalent is required.

Constitutional Law Problems *Two semester hours*

A selection of current cases and issues in constitutional law, studied with reference to their historical background and their political, economic, and social implication. Paper to be prepared by each student. Enrollment limited to fifteen. *Prerequisite:* The course in *Constitutional Law* or its equivalent. Professor O'Toole.

Excess Profits Tax *Two semester hours*

Consideration of Excess Profits Tax Act of 1950 and any amendments thereto; methods of computing tax, alternative credits, relief provisions, binding elections and possible pitfalls, exempt corporations, effect of reorganizations and liquidation, business planning in views of Excess Profits Tax. *Prerequisite:* A course in *Federal Taxation* or its equivalent is required. Mr. Stuetzer.

Tax Problems of Insurance and Pensions *Two semester hours*

Income, gift and estate tax aspects of life insurance, endowments and annuities; tax considerations in planning business and family insurance programs; tax aspects of pension plans and pensions; considerations involved in decision to adopt a pension plan and in choice of particular plan.

Labor Law *Two semester hours*

An advanced study of critical legal problems arising out of labor relations. Analysis and research into problems of collective bargaining, including the effect of typical contractual provisions, the operation of grievance procedures and arbitration provisions, and the impact of state and federal legislation on the relations between collective bargaining representatives. Each student will be required to prepare written papers and oral reports of specific practical problems. The seminar is only open to those students who have completed a basic course in labor law or who have been granted permission by the instructor because of some special qualification. Professor Roitman.

Legal Psychiatry *Two semester hours*

An examination of the legal test of mental responsibility in the light of current psychiatric knowledge. The commitment of insane persons, the treatment of sexual psychopaths, and the effect of prison on personality disorders will be examined. Lectures by specialists in psychiatry, penology, and child guidance will be included. This course will be open to a limited number of lawyers, doctors, and social service workers. Permission of the instructor is required. Mr. Berlin.

DEGREES CONFERRED IN JUNE, 1951

Bachelor of Laws Degrees

Class Marshal, IRVING BACKMAN

JASON A. AISNER
 WALTER H. BANKER, JR.
 HERBERT BARON
 EUNICE W. BEESON
 RICHARD P. BOGOSIAN
 RICHARD L. BRICKLEY
 ALFRED CENSULLO
 JOHN P. CONSTANDY
 ANGELO P. COSTA
 JAMES S. COUZENS
 SETRAK K. DERDERIAN
 ROLAND A. DEXTER
 ALDO L. DI FLORIO
 EMILE DUDZIAK
 EDWARD J. DUFFY, JR.
 JOHN D. FAGAN
 JOSEPH A. FURNARI
 WALTER C. GREANEY, JR.
 JOSEPH L. HEALY
 THOMAS S. HOWARD
 ELDRED H. JOHNSON
 CARL V. JOSLIN, JR.
 ELLIOT G. KELLEY
 JOSEPH A. KELLY
 WILLIAM J. KENNEDY, JR.
 EDGAR O. KIROUAC
 ALLAN E. KORPELA
 HARRY LANDFIELD

ROMEYN V. LIPPMAN
 NEWTON LOCKE
 MERRILL R. LOVINGER
 PAUL J. McELIGOTT
 WILLIAM P. McLAREN
 ROBERT A. McLEAN
 THOMAS E. MANGINES
 DONALD L. MARSHALL
 BERNARD W. MARTIN
 JAMES S. MORRISSEY
 GEORGE S. PAPAZOGLOU
 PAUL P. POWERS
 W. MELVIN PRIFTI
 MELVIN RAVECH
 EDWARD L. REYNOLDS, JR.
 ALPHONSE P. SAN CLEMENTE
 LLOYD K. SHARP
 NELSON SHECHTEL
 HENRY R. SHEPLEY, JR.
 DANE M. SHULMAN
 WILLIAM B. SISK
 WALTER J. STANKIEWICZ
 ANTHONY VACCA
 JOSEPH F. VETRANO
 FRANCIS L. WELCH
 ROBERT B. WHITTAKER
 GRAFTON H. WILEY, III
 JOHN J. WILLIS

ROLAND V. WORTHEN, JR.

Master of Laws Degrees

WILLIAM C. BEUCLER
 STANISLAUS J. JABLONSKI

LOUIS SKLAR
 ROBERT S. H. TURNBULL

SAMUEL ZAHAROFF

Master of Laws in Taxation Degree

GENE J. BALCOM

NORTHEASTERN UNIVERSITY
SCHOOL OF LAW ALUMNI ASSOCIATION

FREDERICK J. DILLON, *President*
MILTON J. SEGAL, *Vice-President*
MARJORIE SEAVEY HUMPHRIES, *Secretary*
HAROLD M. LAWSON, *Treasurer*

RUDOLF OSCAR OBERG, *Director of Alumni Relations*

Executive Committee

JOHN E. COYNE
WILLIAM J. FITZGERALD
DEBORAH GREENBERG
DAVID GREER
LOUIS J. GUARAGNA
ROBERT C. HAUFLE

JAMES J. KELLEHER
EDWARD F. McLAUGHLIN, JR.
ELEANOR MARCH MOODY
JOHN T. POWELL
ARTHUR W. SULLIVAN
BLANCHE M. QUAID

STUDENT COUNCILS — 1952

Day Division

JOSEPH A. GATTONI, *Chairman*

RAYMOND ABDELLA
CHARLES E. BLACK
ALBERT BOULANGER
EDWARD K. DABROWSKI
JOHN G. HUCHKO
ANDREAS P. KLAUER

LUTHER R. MANNING, JR.
CHARLES R. MASON
BURTON PIKE
FREDERICK J. QUINLAN
ROBERT M. READY
GEORGE W. WALKER

Evening Division

JESSIE V. TAYLOR, *Chairman*

JOHN P. COX, JR.
DONALD F. FENTON
BESSIE A. LEPPER

HENRY F. MARSHALL
JAMES E. MROSE
JOHN B. MURRAY, JR.

COLLEGES AND UNIVERSITIES REPRESENTED IN STUDENT BODY

1951 — 1952

Alabama, University of	1	New York University	3
American International Institute	1	Nichols Junior College	1
Amherst College	6	North Carolina, University of	1
Arkansas, University of	2	Northeastern University	160
Bates College	3	Northwestern University	2
Boston College	41	Notre Dame	1
Boston University	51	Oberlin College	2
Bowdoin College	2	Ohio State University	1
Bridgeport, University of	4	Ottawa, University of	1
Brown University	11	Paris, University of	1
Budapest, University of	1	Pennsylvania State College	1
Caen, University of	1	Pennsylvania, University of	1
California, University of	1	Pittsburgh University	1
Cite Universitaire of Paris	1	Princeton University	1
Clark University	4	Providence College	8
Colby College	1	Purdue University	2
Colgate University	2	Rhode Island State College	8
College of City of New York	1	Richmond, University of	1
Colorado, University of	1	Rochester, University of	1
Columbia University	5	Rouen, College of	1
Connecticut, University of	6	Sampson College	1
Cumberland College	1	Simmons College	1
Cornell University	1	Springfield College	2
Dartmouth College	6	St. Anselm's College	4
Duke University	2	St. Michael's College	3
Duquesne University	1	Stockholm, University of	1
Edinburgh University	1	Syracuse University	6
Emmanuel College	1	Texas, University of	3
Fordham University	3	Trinity College	3
Georgetown University	1	Tufts College	23
George Washington University	5	Tulane University	2
Harvard University	41	Vermont, University of	4
Hawaii University	1	Villanova	2
Heidelberg, University of	1	Virginia, University of	2
Holy Cross College	14	Wales, University of	1
Howard University	1	Wellesley College	1
Illinois, University of	2	Wheaton College	3
Iowa Wesleyan	1	Williams College	4
Kent State University	1	Wittenburg College	1
Kentucky, University of	1	Wisconsin, University of	1
Lehigh University	1	Worcester Junior College	10
Maine, University of	4	Worcester Polytechnic Institute	3
Massachusetts Institute of Technology	10	Yale University	2
Massachusetts, University of	4		548
Miami, University of	3	<i>Less duplication</i>	139
Michigan, University of	3		
Minnesota, University of	2		409
Munich, University of	1	<i>Plus others</i>	129
New Hampshire, University of	7		
New Mexico, University of	1	<i>Total number of students</i>	538

NORTHEASTERN UNIVERSITY

(Coeducational)

*College of Liberal Arts

Offers a broad program of subjects serving as a foundation for the understanding of modern culture, social relations, and technical achievement. Varied opportunities are available for vocational specialization. Degree: Bachelor of Science or Bachelor of Arts.

*College of Engineering

Offers curricula in Civil, Mechanical, Electrical, Chemical, and Industrial Engineering. Classroom study is supplemented by experiment and research in well-equipped laboratories. Degree: Bachelor of Science in the professional field of specialization.

The College of Engineering also offers during evening hours graduate programs of instruction leading to the degree of Master of Science in certain fields of civil, mechanical, and electrical engineering.

*College of Business Administration

Offers curricula in Accounting, Industrial Relations, Marketing and Advertising, Finance and Insurance, and Business Management. Each curriculum represents in itself a broad survey of business technique, differing from the others chiefly in emphasis. Degree: Bachelor of Science in Business Administration.

School of Law

Offers day and evening undergraduate programs. Admits those who present a minimum of one-half of the work accepted for a bachelor's degree in an approved college or its full equivalent. Degree: Bachelor of Laws. Also offers a graduate program leading to the degree of Master of Laws.

School of Business

Offers curricula through evening classes in Accounting, Business Management, Industrial Management, Marketing, Law and Business, Engineering and Management. Conducts certificate programs in the Labor Relations Institute, Institute of Retailing, Office Management Institute, Institute of Insurance, and the Traffic Management Institute. Arranges intensive programs of one or more courses to serve special needs. Degree: Bachelor of Business Administration with appropriate specification.

The Graduate Division of the School of Business provides an evening program of graduate study leading to the degree of Master of Business Administration.

Evening College of Liberal Arts

Offers courses in the fields of Economics, English, History, Government, Philosophy, Psychology, and Sociology; the program is equivalent in hours to one-half the requirement for the bachelor's degree, and prepares for the study of law and further study in Liberal Arts; special courses may be arranged. Degree: Associate in Arts.

*The Co-operative Plan

The Colleges of Liberal Arts, Engineering, and Business Administration offer day programs and are conducted on the Co-operative Plan. After the freshman year students alternate periods of study with periods of work in the employ of business or industrial concerns. Under this plan they gain valuable experience and earn a large part of their college expenses. Full-time curricula are available for pre-professional students who do not desire the Co-operative Plan.

For further information regarding any of the above schools, address

NORTHEASTERN UNIVERSITY

Boston 15, Massachusetts

School of Law

47 MT. VERNON ST.

Telephone Copley 7-6600

Other Schools

360 HUNTINGTON AVENUE



NORTHEASTERN UNIVERSITY
BOSTON - MASSACHUSETTS



SCHOOL OF BUSINESS

1952-53

EVENING SESSIONS

OFFICE HOURS

JUNE 15 — AUGUST 15

Monday through Thursday 8:45 A.M.—9:00 P.M.

Friday 8:45 A.M.—5:00 P.M.

AUGUST 15 — JUNE 15

Monday through Friday 8:45 A.M.—9:00 P.M.

Saturday 8:45 A.M.—12:00 NOON

The office is closed on all legal holidays.

Interviews

Prospective students, or those desiring advice or guidance regarding any part of the school work or curricula, are encouraged to arrange for personal interviews with the Dean or other officers of instruction. Career planning through competent guidance provides an understanding of professional requirements and develops that definiteness of purpose so vital to success.

Gifts and Bequests

Northeastern University will welcome gifts and bequests for the following purposes:

- (a) For its building program.
- (b) For general endowment.
- (c) For specific purposes which may especially appeal to the donor.

It is suggested that, when possible, those contemplating gifts or bequests confer with the President of the University regarding the University's needs before legal papers are drawn.

Gifts and bequests should be made only in the University's legal name, which is "Northeastern University."

Address Communications to

NORTHEASTERN UNIVERSITY
SCHOOL OF BUSINESS

360 HUNTINGTON AVENUE, BOSTON 15, MASS.

TELEPHONE: COPLEY 7-6600

NORTHEASTERN UNIVERSITY
EVENING DIVISION
SCHOOL OF BUSINESS



[The University is located at
the entrance to the Huntington
Avenue subway within nine
minutes of Park Street and
easily accessible from all points.]

A DISTINCTIVE SCHOOL OF BUSINESS
*providing opportunities for men and women to receive advanced training
in Business during convenient Evening Hours*

Calendar

1952

First semester classes begin	September 15
Legal Holiday—No class sessions	October 13
Week for first term tests	October 20
Legal Holiday—No class sessions	November 11
Legal Holiday—No class sessions	November 27
Week for second term tests	December 1
Final class session before Christmas recess	December 19

1953

First class session after Christmas recess	January 5
Final Examinations, first semester	January 21–30
Second semester classes begin	February 2
Legal Holiday—No class sessions	February 23
Week of first term tests	March 9
Legal Holiday—No class sessions	April 20
Week of second term tests	April 13
Legal Holiday—No class sessions	May 30
Final Examinations, second semester	May 25–June 6
Summer Term begins	June 1
Summer Term ends	Sept. 3

Table of Contents

	Page
Northeastern University, General Statement	
Administrative Organization	5-7
Purpose and Program	16-17
Location	17-18
School of Business	
The Background of an Institution	19
PURPOSE, POLICY, METHODS OF INSTRUCTION	19
VOCATIONAL GUIDANCE	21
SUCCESS OF ALUMNI	19-20
PLACEMENT SERVICE	21
Administrative Organization	7
Staff of Instruction	8-15
Degree Curricula	
ACCOUNTING — PUBLIC (C.P.A.)	25
ACCOUNTING — COMMERCIAL OR INDUSTRIAL	26
ACCOUNTING — COST	27
ENGINEERING AND MANAGEMENT	43
LAW AND BUSINESS	33
MANAGEMENT:	
BUSINESS MANAGEMENT	28
CREDIT AND FINANCIAL MANAGEMENT	29
INDUSTRIAL MANAGEMENT	30
INSURANCE	31
INSURANCE (C.P.C.U.)	32
MARKETING	34
OFFICE MANAGEMENT	35
PERSONNEL AND INDUSTRIAL RELATIONS	36
PRODUCTION MANAGEMENT	37
REAL ESTATE MANAGEMENT	38
RETAILING	39
TRANSPORTATION AND TRAFFIC MANAGEMENT	40
PUBLIC ADMINISTRATION:	
MUNICIPAL MANAGEMENT	41
STATE AND FEDERAL ADMINISTRATION	42
Institute — Certificate Programs	
CREDIT AND FINANCIAL MANAGEMENT INSTITUTE	44
INSTITUTE FOR BUSINESS AND PROFESSIONAL SECRETARIES	46-47
INSTITUTE OF INSURANCE	45
INSTITUTE OF MUNICIPAL MANAGEMENT	48
INSTITUTE OF RETAILING	49
INSTITUTE OF TRANSPORTATION AND TRAFFIC MANAGEMENT	50
LABOR RELATIONS INSTITUTE	51
OFFICE MANAGEMENT INSTITUTE	52
PRODUCTION MANAGEMENT INSTITUTE	53
QUALITY CONTROL INSTITUTE	55
REAL ESTATE INSTITUTE	54
WORLD TRADE INSTITUTE	56

Description of Courses

ACCOUNTING	57
BUSINESS READINGS	83
ECONOMICS	61
ENGLISH	63
INDUSTRIAL MANAGEMENT	64
INSURANCE	68
LAW	69
MARKETING	70
OCCUPATIONS	84
OFFICE MANAGEMENT	73
PERSONNEL AND INDUSTRIAL RELATIONS	74
PUBLIC ADMINISTRATION	76
REAL ESTATE	79
RETAILING	80
SECRETARIAL	81
THESIS	83
TRANSPORTATION AND TRAFFIC MANAGEMENT	82

Administrative Policies

ADMISSION REQUIREMENTS	85
REGISTRATION	86
ATTENDANCE	88
EXAMINATIONS	89
MARKS AND CREDITS	89
TUITION, SCHOLARSHIPS, AND FEES	92

General Information

CLASSROOMS, TEXTBOOKS, RECREATION	88
STUDENT COUNCIL	90-91
	91

Tuition and Other Fees

.	92
-----------	----

Withdrawals and Refunds

.	94
-----------	----

Northeastern University

Administrative Organization

The Northeastern University Corporation

ROBERT GRAY DODGE, *Chairman*

FRANK LINCOLN RICHARDSON, *Vice-Chairman*

CARL STEPHENS ELL, *President of the University*

ROBERT GREENOUGH EMERSON, *Treasurer*

EVERETT AVERY CHURCHILL, *Secretary*

JOSEPH FLORENCE ABBOTT	EDWARD ATKINS LARNER
CHARLES FRANCIS ADAMS	JOHN ENDICOTT LAWRENCE
O. KELLEY ANDERSON	GALEN DAVID LIGHT
HENRY NATHANIEL ANDREWS	RALPH LOWELL
FREDERICK AYER	WILLARD BLACKINTON LUTHER
ARTHUR ATWOOD BALLANTINE	EDWARD ABBOTT MACMASTER
GEORGE LOUIS BARNES	HAROLD FRANCIS MASON
THOMAS PRINCE BEAL	JAMES FRANKLIN McELWAIN
FARWELL GREGG BEMIS	HUGH DEAN McLELLAN
SAMUEL BRUCE BLACK	EDWARD R. MITTON
JOHN S. BOTTOMLY	IRWIN LIKELY MOORE
RICHARD L. BOWDITCH	IRA MOSHER
GEORGE R. BROWN	IRVING EDWIN MOULTROP
GEORGE AUGUSTUS BURNHAM	GEORGE S. MUMFORD, JR.
GODFREY LOWELL CABOT	EDWARD ABRAHAM NATHANSON
ELMER T. CARLSON	HARLAN P. NEWTON
WALTER CHANNING	JOHN THOMAS NOONAN
WILLIAM CONVERSE CHICK	GEORGE OLMSTED, JR.
ROBERT B. CHOATE	AUGUSTIN HAMILTON PARKER, JR.
PAUL FOSTER CLARK	THEODORE R. PEARY
GEORGE HENRY CLIFFORD	EDWARD DANA PHINNEY
ALBERT MORTON CREIGHTON	FREDERICK SANFORD PRATT
ROBERT CUTLER	ROGER PRESTON
MARSHALL BERTRAND DALTON	STUART CRAIG RAND
EDWARD DANA	WILLIAM MCNEAR RAND
EDWARD DANE	NEAL RANTOUL
RALPH MEAD DARRIN	JAMES LORIN RICHARDS
CARL P. DENNETT	JAMES C. RICHDALE
FREDERICK JOSEPH DILLON	HAROLD BOURS RICHMOND
DAVID FRANK EDWARDS	CHARLES FOREST RITTENHOUSE
WILLIAM PARTRIDGE ELLISON	LEVERETT SALTONSTALL
WALLACE FALVEY	RUSSELL MARYLAND SANDERS
JOHN WELLS FARLEY	RALPH T. SAYLES
JOSEPH FABIAN FORD	ANDREW SEBASTIAN SEILER
NOBLE FOSS	GIFFORD KINGSBURY SIMONDS, JR.
ERNEST BIGELOW FREEMAN	JOSEPH P. SPANG, JR.
JOHN LIVINGSTONE GRANDIN, JR.	FRANK PALMER SPEARE
MERRILL GRISWOLD	F. R. CARNEGIE STEELE
H. FREDERICK HAGEMANN, JR.	CHARLES STETSON
GEORGE HANSEN	ABBOT STEVENS
CHRISTIAN ARCHIBALD HERTER	EARL PLACE STEVENSON
CHARLES EDWARD HODGES	ROBERT GREGG STONE
HAROLD DANIEL HODGKINSON	ROBERT T. P. STORER
HARVEY P. HOOD	FRANK HORACE STUART
CHANDLER HOVEY	RALPH EMERSON THOMPSON
HOWARD MUNSON HUBBARD	ELIOT WADSWORTH
MAYNARD HUTCHINSON	SAMUEL WAKEMAN
RAY E. JOHNS	EUSTIS WALCOTT
CHARLES BERKLEY JOHNSON	HAROLD JOHN WALTER
JACOB JOSEPH KAPLAN	EDWIN SIBLEY WEBSTER, JR.
MICHAEL T. KELLEHER	EDWARD AUGUSTUS WEEKS, JR.
HARRY HAMILTON KERR	SINCLAIR WEEKS

Northeastern University

General University Committees

Executive Council

CARL STEPHENS ELL, *Chairman*

EVERETT AVERY CHURCHILL
ALBERT ELLSWORTH EVERETT

MILTON JOHN SCHLAGENHAUF
WILLIAM CROMBIE WHITE

University Cabinet

CARL STEPHENS ELL, *Chairman*

WILLIAM THURLOW ALEXANDER
EVERETT AVERY CHURCHILL
ALBERT ELLSWORTH EVERETT
GEORGE RAYMOND FENNELL
ROGER STANTON HAMILTON
CHARLES WILLIAM HAVICE
FREDERICK ROBERT HENDERSON
WILFRED STANLEY LAKE
DONALD HERSHEY MACKENZIE

GEORGE ARTHUR MALLION
HAROLD WESLEY MELVIN
RUDOLPH MAGNUS MORRIS
LOWELL STARBUCK NICHOLSON
WINTHROP ELIOT NIGHTINGALE
RUDOLF OSCAR OBERG
EDWARD SNOW PARSONS
MILTON JOHN SCHLAGENHAUF
J. KENNETH STEVENSON

WILLIAM CROMBIE WHITE

Library Committee

EVERETT AVERY CHURCHILL, *Chairman*

WILLIAM THURLOW ALEXANDER
ALBERT ELLSWORTH EVERETT
ROGER STANTON HAMILTON

WILFRED STANLEY LAKE
HAROLD WESLEY MELVIN
MYRA WHITE

WILLIAM CROMBIE WHITE

School of Business

Administrative Organization

General Officers of Administration

CARL STEPHENS ELL, A.B., M.S., Ed.M., Sc.D., *President of the University*
FRANK PALMER SPEARE, M.H., LL.D., *President Emeritus of the University*
EVERETT AVERY CHURCHILL, A.B., Ed.D., *Vice-President of the University*
ALBERT ELLSWORTH EVERETT, S.B., M.B.A., *Dean of the School of Business*

Officers of the School of Business

ALBERT ELLSWORTH EVERETT, S.B., M.B.A., *Dean*
GEORGE ARTHUR MALLION, B.Ch.E., *Assistant Dean*
LINCOLN BATESON, B.B.A., *Registrar*
MILTON JOHN SCHLAGENHAUF, A.B., B.D., M.A., *Director of Public Relations*
NORMAN HENRY GREEN, A.B., *Placement Officer*
ROBERT E. LANG, B.S., *Director of Veterans' and Students' Accounts*
PAUL R. SPINNEY, *Director of Veterans' Services*
J. KENNETH STEVENSON, B.C.S., *Assistant to the Vice-President*
RUDOLF OSCAR OBERG, S.B., Ed.M., *Director of Alumni Relations*
DAISY MILNE EVERETT, *Bursar*

Administrative Committee

ALBERT ELLSWORTH EVERETT, *Chairman*
FRANK M. CUSHMAN GEORGE A. MALLION
HOWARD F. GREENE FRANKLIN NORVISH
WALTER J. HUNT STANLEY O. ROBINSON
A. HOWARD MYERS BERNARD H. SHELTON
HARRY OLINS BENJAMIN F. STACEY

Office Administration

LINCOLN BATESON, *Registrar*
KENNETH I. BALKAN, *Assistant to the Registrar*
LAWRENCE J. JONES, *Assistant to the Registrar*
JOHN J. MINNAHAN, *Assistant to the Registrar*
PAULINE M. HOVSEPIAN, *Secretary to the Dean*
HARRIET O. EIDE, *Secretary*
ALAYNE SAUTER, *Secretary*
JOYCE E. SPRAGUE, *Secretary*
NORMA JAMES, *Clerk Typist*
JANICE JEWETT, *Secretary*
VIVIAN W. PERRY, *Bookkeeper*

School of Business

Staff of Instruction

- JOHN W. AGNEW, Northeastern University Law School
Director, Institute of Municipal Management
Manager, Department of Municipal Finance, First National Bank
- RAYMOND J. AHERNE, A.B., A.M., Boston University
Government Controls in Business
Boston College
- MICHAEL ALBERY, M.B.A., University of Berlin; Ph.D., University of Lausanne
Managerial Control-Distribution
Associate Professor, Boston College, College of Business Administration and Graduate School
- JOSEPH ALEXANDER, B.S., University of Oklahoma; M.A., Columbia University
Business Economics
Babson Institute
- LEONARD D. ALLEN, Bentley School of Accounting and Finance
Budget Procedures, Controllershship
Assistant to Treasurer, Eastern Gas and Fuel Associates
- RAYMOND P. ALLEN, B.B.A., Northeastern University
Casualty Insurance
Special Auditor, Liberty Mutual Insurance Company
- STANFORD W. APGAR, M.E., Cornell University
Time Study I
Head of Standards Department, Reece Corporation
- BENJAMIN ARAC, B.S., LL.B., M.B.A., New York University
Tax Planning
Partner, Widett and Kruger
Former Associate Tax Editor, Federal Tax Department, Research Institute of America
- GEORGE B. BALDWIN, A.B., Princeton University
Labor Relations Seminar
Massachusetts Institute of Technology
- NORMAN F. BARBEAU, Bentley School of Accounting and Finance
Principles of Production, Production Planning and Control
Supervisor of Priorities, General Electric Company
- SWIFT C. BARNES, JR., A.B., M.C.S., Dartmouth College
Market Research
Manager, Market Research, Towle Manufacturing Company
- WILLIAM W. BATTILANA, Curtiss Aviation Service
Purchasing
Purchasing Agent, East Coast Aviation Corporation
- GEORGE L. BEDFORD, B.S., Tufts College; M.B.A., New York University
Applied Security Analysis
Industry Analyst, Keystone Custodian Funds, Inc.
- JOSEPH JOHNSON BEVINS
Introductory Accounting, Intermediate Accounting
Instructor, Boston Clerical School
- JOHN BIDWELL, A.B., Harvard University
Managerial Control-Distribution
Manager, Marketing Research Division, Dewey & Almy Chemical Company
- EUGENE JOSEPH BLACKMAN, B.S., M.A., Boston University
Business English
Northeastern University
- DONALD H. BLATT, B.S. in B.A., Boston University
Council Manager-Public Relations
Town Manager, Stoughton, Massachusetts
- RAYMOND EARL BLOIS, B.S., Boston University; M.A., Harvard University; Ph.D., Boston University
Business English
Northeastern University
- WILLIAM ORR BOGARDUS, Bentley School of Accounting; Northeastern University School of Law
Forms Design and Control
President, W. O. Bogardus Company, Inc.

- ROBERT J. BOLGER, JR., B.S., Massachusetts Institute of Technology; M.B.A., Harvard University
Management Problems and Policies
 Procedures Analyst, General Electric Company
- CLAUDE L. BOOHER, Miami University; Indiana University Law School
Business Insurance
 Insurance Consultant
- ALLYNN W. BOWEN, Northeastern University; Franklin and Marshall College
Principles of Production, Production Planning and Control, Job Analysis and Evaluation
 Industrial Engineer and Job Evaluation Co-ordinator, Sylvania Electric Products, Inc.
- ORRIN S. BRADBURY, B.A., University of Maine
Retail Store Buying
 Buyer, William Filene's Sons Company
- JOHN J. BRENNAN, JR., B.S., Boston College; M.B.A., D.C.S., Harvard University
Production Planning and Control
 Chairman, Industrial Management Department, Boston College
- STEPHEN F. BURKE
Real Estate Appraisal
 Real Estate Appraiser, Director Union Federal Savings and Loan Association
- A. ARTHUR CAPONE, S.B., M.A., Boston University; Ed.M., Harvard University; LL.B., Boston College
Criminology, Sociology
 Probation Officer, Boston Municipal Court
- SAMUEL RICHARD CARLISLE, A.B., Dartmouth College
Business Conferences, Techniques of Supervision
 Personnel and Training Specialist, Manage Arm, Inc.
- MAURICE LEO CARROLL, A.B., Harvard College; A.M., University of Michigan
Foreign Trade Principles and Practices
 Business Specialist in Foreign Trade, U. S. Department of Commerce
- SAVERIO CERULLO, B.S., M.B.A., Boston University
Mathematics of Accounting
 Northeastern University
- WILLIAM J. CHEVALIER, LL.B., Boston College
Real Estate: Law and Conveyancing, Investment and Management
 Real Estate Consultant, Member Boston Real Estate Board
- VICTOR COHEN, A.B., Union College; LL.B., Harvard University; C.P.A.
Basic Federal Taxes
 Tax Accountant, Lybrand, Ross Brothers and Montgomery
- ROBERT R. CONROY
Industrial Safety
 Safety Supervisor, Employers' Group
- THOMAS COOPER, JR.
Public Speaking Conference Leadership, Supervisory Training
 Northeastern University
- LOUIS COOPERSTEIN, A.B., A.M., Harvard University
Business English
 Northeastern University
- ALFRED CRAMER, A.B., Princeton University
Job Analysis and Evaluation, Time Study
 Industrial Engineer, Sylvania Electric Products, Inc.
- LESTER S. CRAMER, A.B., Harvard University
Business Economics, Labor-Management Relations
 President, Cramer Research, Inc.
- ANTHONY J. CUCCHIARA, Massachusetts Advertising School
Principles of Advertising, Problems of Advertising
 President, Copley Advertising Agency, Incorporated
- FRANK M. CUSHMAN, B.S., M.A., University of Pennsylvania
Transportation Practices and Problems, I.C.C. Practices and Procedure
 Traffic and Industrial Consultant
 Director, Transportation and Traffic Management Institute
- JOHN F. DARGIN, JR., LL.B., Northeastern University
Corporations, Partnerships and Agency
 Attorney at Law
- GEORGE F. DAWE, Northeastern University
Job Analysis and Evaluation
 Wage Rate and Personnel Department, General Electric Company

- LAURENCE STROUT DAY, Ph.B., Brown University
Credits, Advanced Credits
 Credit Manager, W. F. Schrafft and Sons Corporation
- STEPHEN R. DEANE, A.B., Bowdoin College; A.M., Harvard University; Ph.D., University of Maryland
Industrial Psychology
 Simmons College
- WILLIAM J. DEEGAN, JR., University of Florida; University of Wisconsin; George Washington University
Techniques of Municipal Management
 City Manager, Quincy, Massachusetts
- ALAN J. DIMOND, A.B., LL.B., Harvard University
Contracts
 Attorney at Law
- GERARD J. DONOVAN, Columbia University; Academy of Advanced Traffic
Traffic Management, Rates and Tariffs
 Traffic Representative, Johnson Lines, Inc.
- JAMES T. DUNPHY, Bentley School of Accounting and Finance
Cost Accounting
 Manager, Milk Accounting Division, H. P. Hood and Sons, Inc.
- ROSSELL G. ELDRIDGE, B.S., Cornell University
Market Research
 Manager Sales Research, H. P. Hood and Sons, Inc.
- ROBERT F. ESTELLA, Boston University; Northeastern University
Time Study
 Supervisor of Time Study, Sylvania Electric Products, Inc.
- ANGELO JOHN FIUMARA, A.B., LL.B., Boston College
Contracts, Law of Sales
 Attorney at Law
- WILLIAM HUGHART FLETCHER, A.B., DePauw University; M.B.A., Northwestern University; LL.B., Harvard University; C.P.A.
Advanced Accounting Problems, Mathematics of Accounting
 Member of Staff, Price Waterhouse & Company, Public Accountants
- GEORGE HUTCHINSON FOLEY, A.B., LL.B., Harvard University
Labor Legislation
 New England Regional Counsel, Wage Stabilization Board
- CURTIS ROY GANONG, B.S., Northeastern University
Production Planning and Control
 Supervisor, Industrial Engineering, Industrial Engineer, Sylvania Electric Products, Inc.
- LESTER GAYNOR, B.S., Tufts College; M.S., Harvard University
Public Works — Advanced Problems
 Engineer, Whitman and Howard, Engineers
- JOHN A. GEARY, B.S.Ed., Massachusetts Teachers College
Industrial Safety
 Supervisor of Training, Engineering Department, Employers Liability Assurance Corporation
- DONALD R. GILMORE, A.B., M.C.S., Dartmouth College
Financial Organization
 Financial Economist, Federal Reserve Bank of Boston
- THOMAS Q. GILSON, A.B., Princeton University; M.A., Columbia University
Personnel Administration
 Massachusetts Institute of Technology
- EUGENE D. GODDESS, University of Illinois
Techniques of Supervision, Industrial Experimentation
 Supervisor of Product Engineering, Sylvania Electric Products, Inc.
- JOSEPH M. GOLEMME, B.S., Northeastern University; M.A., Boston University
Managerial Accounting
 Northeastern University
- HOWARD FRANCIS GREENE, Northwestern University; C.P.A.
Advanced Accounting Problems, C.P.A. Problems
 Public Accountant, in practice as Principal
- THOMAS J. GRIFFIN, B.A.O., M.A.O., D.A.O., Staley College
Public Speaking, Parliamentary Procedure
 Griffin Studio of Speech

- THOMAS G. GROGAN, Northeastern University
Production Planning and Control
 Staff Assistant to Manager of Manufacturing, General Electric Company
- WALTER BRADFORD GROVER
Advertising Principles
 Advertising and Merchandising Consultant
- JOHN F. GUTHRIE, A.B., Boston College
Principles of Selling
 Sales Manager, East Coast Aviation Corporation
- STERLING B. HAGER, Northeastern University
Time Study
 Time Study Engineer, Bay State Abrasives Company
- DANA P. HARDY, Oxford School of Business Administration
Life Insurance
 Training Supervisor, John Hancock Mutual Life Insurance Company
- FREDERICK W. HARRISON, B.A., University of Maine; Ph.D., New York University
Financial Organization
 Babson Institute
- GILMAN CLIFTON HARVEY, Massachusetts Teachers College; Bentley School of Accounting and Finance; C.P.A.
Managerial Accounting
 Comptroller and Clerk of the Corporation, Hawkrigde Brothers Company
 Assistant Treasurer, Alcoma Association, Inc., Alcoma Packing Company, Inc.
- HUGH HEALEY, S.B., Massachusetts Institute of Technology
Work Simplification
 Assistant to Manufacturing Superintendent, General Electric Company
- THOMAS CARROLL HEFFERNAN, A.B., A.M., Boston College; LL.B., Northeastern University
Business English
 Administrative Assistant, Boston School Department; formerly Master, English Department, Boston English High School
- CARL W. HELLER, Babson Institute
Principles of Selling
 Sales Manager, G. L. Fisher and Company
- J. KEENE HORNER, B.A., University of Oklahoma; M.B.A., Harvard University
Financial Organization, Principles of Investments, Security Analysis, Business Readings Counsellor
 Dean of the Faculty, Director of Division of Finance, Babson Institute
- PAUL F. HOWARD, B.S.C.E., Tufts College; M.S., Harvard University
Public Works
 Chief Engineer, Whitman and Howard
- GEORGE W. HOWE, A.B., M.B.A., Harvard University
Management Problems and Policies, Financial Organization
 Boston University
- GEORGE J. HUBERMAN, A.B., Harvard University
Retail Store Merchandising
 Buyer, William Filene's Sons Company
- WALTER J. HUNT, Boston University Law School; A.B., Northeastern University
Contracts
 Northeastern University
- MELVIN C. JACK, B.S., M.S., University of Massachusetts
Managerial Accounting
 Head of Commercial Department, North Quincy High School
- STANLEY MARTIN JACKS, A.B., A.M., Harvard University; LL.B., Northeastern University
Labor-Management Relations
 Simmons College
- JOHN H. JUDGE, B.B.A., M.Ed., Boston University
Psychology
 Executive Director, Beaverbrook Academy
- JOSEPH C. KANDIKO, JR., B.S., Cornell University
Marketing
 Marketing Engineer and Analyst, General Electric Company
- HYMAN MENDEL KAUFMAN, S.B., Boston University; M.A., Columbia University; LL.B., Harvard University
Business Law
 Attorney at Law

RICHARD A. KAYE, A.B., LL.B., Harvard University

Business Law

Attorney at Law

LYMAN A. KEITH, B.S., Northeastern University; M.A., M.B.A., Boston University

Managerial Accounting

Northeastern University

HAROLD KERN, A.B., University of Newark; M.B.A., New York University

Budget Procedures, Controllership — Theory and Practice

Treasurer, National Pneumatic Company, Inc.

HAROLD KILGORE, S.B., S.M., Massachusetts Institute of Technology

Principles of Public Works

Engineer, Anderson, Nichols & Co.

WILLIAM J. KIRBY, A.B., Boston College; M.B.A., Harvard University

Retail Credit

Credit Manager, Gilchrist Company

MARCEL S. KISTIN, B.A., University of Wisconsin; LL.B., Harvard University

Government Controls in Business

Attorney at Law

ROBERT J. KNOWLTON, B.S., Northeastern University

Work Simplification

Plant Engineer, Waltham Grinding Wheel Co.

EDWARD R. KNOX, Harvard University

Group Insurance

Group Insurance Supervisor, John Hancock Mutual Life Insurance Company

PAUL D. KRENSKY, B.S., Tufts College; M.S., Syracuse University

Quality Control

Quality Control Engineer, Gillette Safety Razor Company

HENRY AUGUST KRIEBEL, B.S., M.A., Lehigh University; Ph.D., Columbia University

Managerial Accounting

Babson Institute

WILLIAM BRYANT LAMPREY, LL.B., Suffolk University; C.P.A.

Accounting Problems, Analysis Financial Statements, Constructive Accounting

Public Accountant and Attorney at Law, in practice as Principal

ARTHUR J. LEBLANC, B.S., Boston University

Scientific Management in Office Practice

Methods and Procedure Division, General Electric Company

FRANCIS G. LEE, A.B., Boston College; A.M., Fordham University; LL.B., American Uni-

versity; C.P.A.

Managerial Accounting

Boston College

ABRAHAM HYMAN LEVINE, B.S., Tufts College

Work Simplification

Industrial Engineer, General Electric Company

HAROLD LEVINE, B.S., LL.B., Boston University; C.P.A.

Managerial Accounting

Attorney at Law and Public Accountant, Herman B. Cohen and Company

BENJAMIN ABBOTT LITTLE, A.B., University of Pennsylvania; Ed.M., Boston University

Business English

Head of English Department, Winthrop Junior High School

GEORGE E. LONERGAN

Casualty Insurance

Superintendent Education Department, Employers' Group

EDMUND M. MACCLOSKEY, A.B., Bowdoin College; A.M., Boston University

Public Speaking

Drama and Speech, Belmont High School

LAWRENCE HOWARD MALCHMAN, B.S., B.A., Ed.M., Boston University; C.P.A.

Managerial Cost Accounting

Northeastern University

GEORGE L. MARRAH, B.S., Boston University; M.A., University of California

Business Economics

Investment Analyst, Old Colony Trust Company

JOHN E. MARSHALL, B.S. in I.E., Northeastern University

Job Analysis, Plant Layout, Production Control

Industrial Consultant

- RALPH G. McADAMS, Bentley School of Accounting and Finance
Motor Carrier Accounting
 Office Manager, Malkin Motor Freight
- FRANCIS JAMES McDONALD, Boston University
Merchandise Display for Sales Promotion
 Supervisor of Display, William Filene's Sons Company
- WILLIAM H. MIERNYK, B.A., M.A., University of Colorado; M.A., Harvard University
Development of Economic Thought
 Staff Economist, Comm. of New England, National Planning Association
- GERALD E. MILES, B.S., Washington Missionary College; A.M., Boston University; Ed.M., Harvard University
Employment Testing
 Personnel Consultant
- JOHN E. MILLEA, A.B., Clark University; M.B.A., Harvard University
Management Problems and Policies, Production Planning and Control
 Industrial Consultant
- AUGUST C. MILLER, JR., B.S., Bowdoin College; A.M., Harvard University
American Government, Comparative Government
 Wheaton College
- CEDRIC BENJAMIN MINAS, LL.B., LL.M., Boston University; Boston University College of Business Administration
Business Economics
 Instructor, Medford High School; Member, Massachusetts Bar
- WILLIAM C. MORGAN, A.B., Harvard College; C.P.A.
Auditing, Audit Practice
 Public Accountant, in practice as Principal
- A. HOWARD MYERS, A.B., Cornell University; M.A., Ph.D., Columbia University
Labor Relations Seminar
 Labor Arbitrator; Chairman, New England Regional Wage Stabilization Board
- FRANKLIN NORVISH, B.S., Colby College; M.A., Yale University
Business English
 Northeastern University
- R. WINSTON OBERG, B.B.A., University of Minnesota; M.B.A., Ohio State University
Personnel Administration, Labor-Management Relations
 Massachusetts Institute of Technology
- EDWARD T. O'DONNELL, B.C.S., New York University; M.B.A., Boston University
Business Statistics
 Employment Analyst, U. S. Bureau of Labor Statistics
- HARRY OLINS, A.B., LL.B., Harvard University
Business Law, Contracts
 Attorney at Law
- JOHN L. OLSEN, JR., S.B., Massachusetts Institute of Technology
Office Organization and Administration
 Office Management Engineer, Liberty Mutual Insurance Companies
- CLINTON A. PETERSEN, B.S., Rhode Island State College
Managerial Accounting
 Babson Institute
- PHILIP POLANSKY, B.S. in E.E., Tufts College
Purchasing
 Purchasing Agent, Eagle Shoe Manufacturing Company
- FRANK WALTER PRESCOTT, Boston University, Northeastern University
Industrial Journalism
 Callaway Associates
- HOMER P. RANSOM, B.S. in I.E., Northeastern University
Work Simplification
 Motion Study Specialist, General Electric Company
- WILLIAM H. REYNOLDS, S.B., A.M., Harvard University
Business English
 Northeastern University
- FRANK P. RING, Ph.B., Brown University
Retail Store Management
 Division Selling Superintendent, William Filene's Sons Company
- C. JAY ROBINSON, LL.B., Northeastern University
Fire Insurance, Inland Marine Insurance
 Manager Business Development, Fairfield and Ellis

- STANLEY O. ROBINSON, B.S. in M.E., Tufts College
Time Study
 Industrial Consultant
- MELVIN ROTHBAUM, A.B., A.M., Harvard University
Labor Relations Seminar
 Industrial Relations Analyst, Wage Stabilization Board
- EDWARD L. SCHWARTZ, A.B., City College of New York; LL.B., Harvard University
Corporations, Partnerships, Agencies
 Attorney at Law, Commissioner on Uniform State Laws
- LEONARD AVERN SEDER, S.B. in Ch.E., Massachusetts Institute of Technology
Quality Control, Advanced Quality Control
 Quality Control Engineer, Gillette Safety Razor Company
- ROBERT M. SEGAL, A.B., Amherst College; LL.B., Harvard University
The Labor Contract
 Attorney at Law
- SAMUEL SHAPIRO, A.B., Tufts College; M.B.A., Harvard University; C.P.A.
Business Economics, Financial Organization, Managerial Accounting
 Industrial Consultant, Public Accountant, in practice as Principal
- BERNARD HORACE SHELTON, Massachusetts Institute of Technology; Boston University
Principles of Selling, Sales Management
 Field Representative, John Hancock Mutual Life Insurance Company
- JOSEPH SKINNER, A.B., Ph.D., Harvard University
Business English
 Massachusetts College of Pharmacy
- ALBERT SLAVIN, Ed.B., Ed.M., Boston University; C.P.A.
Managerial Accounting
 Northeastern University
- FRANCIS J. SLYVA,
Personnel Management Practices
 Director of Personnel, Elm Farm Foods Company
- ALFRED E. SMITH, Boston University
Retail Store Advertising
 Assistant Advertising Director, Gilchrist Company
- SHEA SMITH, III, B.S. Ch.E., University of Wisconsin; M.B.A. Harvard University
Business Planning and Research
 Marketing Research, Monsanto Chemical Company
- ALLAN SPACK, LL.B., Northeastern University
Contracts, Negotiable Instruments, Creditors' Rights
 Attorney at Law
- B. HOWARD SPICKER, Hudson College; C.P.A.
Municipal Accounting
 In Public Accounting Practice as Principal, B. Howard Spicker
- IRWIN SPRINGER, LL.B., Boston University
Legal Aspects of Foreign Trade
 Attorney at Law
- BENJAMIN FRANKLIN STACEY, A.B., Dartmouth College; M.C.S., Amos Tuck School
Business Planning and Research
 Industrial Analyst, The First National Bank of Boston
- WILLIAM M. STEWART, B.S., Springfield College
Principles of Selling
 Burdett College
- ARTHUR JOHN SULLIVAN, B.S.Ed., Salem Teachers College; Ed.M., M.B.A., Boston University;
 C.P.A.
Cost Accounting, Auditing
 Instructor, Boston English High School
- EDWARD J. SULLIVAN, JR., B.L.I., Emerson College; M.A., University of Michigan
Public Speaking
 Northeastern University
- ERNEST LEO SULLIVAN, B.B.A., Ed.M., Boston University
Introductory Accounting and Intermediate Accounting
 Senior Instructor, Boston Clerical School
- GEORGE J. SULLIVAN, Bentley School of Accounting and Finance
Municipal Accounting II
 Town Accountant, Framingham, Massachusetts

- JOHN E. SULLIVAN, A.B., Boston College; Ed.M., Boston University
Marketing, Practical Training Methods
 Assistant to Director, Fisher School
- JOHN F. SULLIVAN, A.B., M.A., Boston University
Business Economics
 Securities Analysis Department, Merchants National Bank
- ALBERT G. SWEETSER, A.B., Harvard College; M.B.A., New York University
Analysis of Financial Statements, Introductory Accounting
- ALLAN A. TEPPER, A.B., LL.B., Harvard University
Labor Legislation
 Labor Relations Attorney
- CHARLES P. THOMAS, B.A., Bates College; M.B.A., Harvard University; C.P.C.U.
Fundamentals of Insurance
 Director of Sales Training, Liberty Mutual Insurance Company
- PAUL E. TIERNEY, Bentley School of Accounting and Finance; C.P.A.
Internal Auditing
 Auditor for John Hancock Mutual Life Insurance Company
- BERNARD A. TORRI, B.B.A., Northeastern University
Office Organization and Administration
 Coordinator, Boston Insurance Company
- PHILIP S. TRITCHLER, North Dakota State College
Punched Card Accounting
 Supervisor of Machine Accounting, H. P. Hood and Sons Company
- A. MORELEY UNDERHILL, B.S., Pennsylvania State College
Industrial Packaging
 Superintendent Shipping, and Packaging Engineer, Meter and Instrument Department,
 General Electric Company
- MARK WAINER, LL.B., LL.M., Boston University
Business Laws; Corporations, Partnerships and Agency; Management of Small Business
 Attorney at Law
- BERNARD WALL, B.S., Colby College; LL.B., Harvard University
Basic Federal Taxes, Advanced Federal Taxes
 Attorney at Law
- ROBERT JOHN WEAVER, B.B.A., Northeastern University; C.P.A.
Budget Procedure, Controllorship
 Northeastern University
- DUDLEY A. WEISS, A.B., LL.B., Harvard University
Government Controls in Business
 Attorney at Law
- ROBERT GEORGE WERTHEIMER, A.B., Rainer Reai Gymnasium; M.B.A., Old Academy, Vienna;
 Ph.D., Vienna University
History of Economic Thought, Government and Business
 Babson Institute; Graduate and Research Assistant, Harvard University
- ALAN F. WESTIN, A.B., University of Florida; LL.B., Harvard University
Constitutional History, American Foreign Policy
 Tufts College
- ROBERT H. WHEELER, B.B.A., Northeastern University
Production Planning and Control
 Industrial Engineer, Bay State Abrasive Products Co., Inc.
- LESLIE M. WILLARD, Northeastern University
Principles of Assessing
 Superintendent of Public Works, Ayer, Massachusetts
- EDWARD R. WILLETT, B.S., Northeastern University; M.A., Ph.D., Harvard University
Business Statistics
 Northeastern University
- RONALD S. WOODBERRY, JR., A.B., M.C.S., Dartmouth College
Motor Carrier Operations
 General Manager, D. S. Woodberry Company
- VINCENT PAUL WRIGHT, B.S., M.A., Harvard University
History of Economic Thought, Government and Business
 Boston College
- ALBERT W. WUNDERLY, A.B., University of Maine; LL.B., Yale University
Municipal Law
 Attorney at Law
- JOHN WILLIAM ZORN, B.L.I., Emerson College; Ed.M., Boston University
Public Speaking, Business Conferences
 Head of English Department, Weston High School

Northeastern University

General Statement

NORTHEASTERN UNIVERSITY is incorporated as a philanthropic institution under the General Laws of Massachusetts. The State Legislature, by special enactment, has given the University general degree granting powers.

The Corporation of Northeastern University consists of men who occupy responsible positions in business and the professions. This Corporation elects from its membership a Board of Trustees in whom the control of the institution is vested. The Board of Trustees has four standing committees: (a) An Executive Committee which has general supervision of the financial and educational policies of the University; (b) a Committee on Buildings which has general supervision over the building needs of the University; (c) a Committee on Funds and Investments which has the responsibility of administering the funds of the University; (d) a Committee on Development which is concerned with furthering the development plans of the University.

Founded in 1898, Northeastern University from its beginning has had as its dominant purpose the discovery of human and social needs and the meeting of these needs in distinctive and highly serviceable ways. While subscribing to the most progressive educational thought and practice, the University has not duplicated the programs of other institutions but has sought "to bring education more directly into the service of human needs."

The Northeastern Plan of Education is especially designed for students who must earn while they learn. Basically, this plan consists of two types of education:

- (1) The Day Colleges are conducted upon the co-operative basis whereby upper-class students alternate regular periods of instruction at the University with similar periods under supervised employment upon a job with pay in business or industry. Approximately six hundred business and industrial concerns co-operate with Northeastern University in making this program effective.
- (2) The Evening Division offers curricula for students who hold regular jobs in the day and attend classes in the evening hours.

The following is a brief outline of the principal types of educational opportunities offered:

In the Field of Liberal Arts —

The College of Liberal Arts offers majors in the usual fields of the arts and sciences leading to the degrees of Bachelor of Arts and Bachelor of Science. With the exception of pre-professional programs, all day curricula are five years in length and operated on the Co-operative Plan.

The College of Liberal Arts also offers certain of its courses during evening hours, constituting a program of three years' duration equivalent in hours to one-half the requirements for the A.B. or S.B. degree, and providing a general education and preparation for admission to the School of Law. The degree of Associate in Arts is conferred upon those who complete this program.

In the Field of Business —

The College of Business Administration offers five-year co-operative curricula in Accounting, Industrial Relations, Marketing and Advertising, Finance and Insurance, and Business Management leading to the degree of Bachelor of Science in Business Administration.

The School of Business — operated during evening hours — offers undergraduate curricula leading to the degree of Bachelor of Business Administration in Accounting, Business Management, Credit and Financial Management, Industrial Management, Insurance, Law and Business, Marketing, Office Management, Personnel and Industrial Relations, Production Management, Public Administration, Real Estate, Retailing, Traffic and Transportation, and Engineering and Management. Students desiring shorter programs concentrated in specific areas may enroll in one of the Institute programs provided in each of the areas mentioned above. The Institute for Business and Professional Secretaries is also offered as a special program for women.

The Graduate Division of the School of Business provides an evening program of graduate study leading to the degree of Master of Business Administration.

In the Field of Engineering —

The College of Engineering, one of the largest in the United States, offers five-year co-operative curricula in Civil, Mechanical, Electrical, Chemical, and Industrial Engineering leading to the degree of Bachelor of Science with specification according to the department in which the student qualifies.

The College of Engineering also offers during evening hours graduate programs of instruction leading to the degree of Master of Science in certain fields of Civil, Mechanical, and Electrical Engineering. These evening curricula are designed to be of service to young engineering graduates who are employed in the Greater Boston area.

The Lincoln Technical Institute offers during evening hours college level programs leading to the degree of Associate in Engineering in Chemistry, Civil and Structural, Mechanical, Electrical, Electronic, and Industrial Engineering.

In the Field of Law —

The School of Law conducts both a day and an evening undergraduate program which prepares for admission to the bar and for the practice of the law and leads to the degree of Bachelor of Laws. A graduate program is also offered which leads to the degree of Master of Laws.

Location of University Buildings

Northeastern University is located in Boston, a city which is rich in educational and cultural opportunities. The School of Business is in the University center on Huntington Avenue just beyond Massachusetts Avenue at the entrance to the Huntington Avenue Subway. The School is easily reached from the various railroad stations and from all points of the Metropolitan Transit Authority. Ample parking space is available in the rear of Richards Hall.

Richards Hall

Richards Hall, a four-story building at 360 Huntington Avenue, contains over one hundred thousand square feet of floor space devoted to administrative and instructional purposes. On the first floor are the general administrative offices of the University. The University Bookstore, the "Husky Hut" and the student checkroom are located on the ground floor. On the various floors are three large lecture halls and numerous classrooms and laboratories. The offices of the Evening Division are located on the first floor.

Student Center Building

The Student Center Building contains administrative offices, facilities for student activities, reading and study rooms, lounges, some classrooms and an auditorium seating 1,300 for student convocations.

Library Building

This structure, completed in 1952, is a companion building to Richards Hall, consists of five floors, and contains about 85,000 square feet of floor area. The lower two and one-half floors will be used for the University Library. It provides five reading rooms seating over 600 students and stack capacity for about 170,000 volumes in addition to the special facilities of a modern university library. A well-equipped listening room, a browsing library, smoking rooms, and a microfilm room are included among these facilities. The upper two and one-half floors house the Department of Drawing and the Departments of English and Modern Languages and will provide a number of classrooms and drawing rooms.

Science Hall

This building contains forty-two thousand square feet of floor space. Here are located the Chemical Engineering and Biological laboratories, a large commons room open to day and evening students, and eighteen classrooms and lecture halls.

Botolph Building

The South Building of the University contains certain laboratories, a large lecture hall, and several classrooms.

Beacon Hill Building

The Beacon Hill Building, now occupied exclusively by the School of Law, is located at 47 Mt. Vernon Street, within sight of the State House, and contains administrative offices, a library, classrooms, student lounges, and other facilities.

School of Business

The Background of an Institution

FORTY-FIVE YEARS ago, in March of 1907, the first undergraduate evening school of business in New England was organized. This was the beginning of Northeastern University School of Business, a pioneer endeavor to bridge an existing gap in business and professional education. Four years later, the School was authorized by the Massachusetts Legislature to grant university degrees to its graduates.

Administrative Policy

The School of Business was founded to serve those who have only evening hours free for study — a special field, limited to the education of the person who has permanently left day school and gone to work. The Northeastern University evening student is an adult, usually more mature than the student of a day school. He is in direct touch with business and is expected to take an active part in his own supervised training. The constant effort of the administrative and teaching staff is toward more effective means of suiting their educational service to the individual evening student.

Purpose

Now, just as at the start, the School seeks first to determine what business needs in its personnel, and then to supply properly trained men and women who can fulfill those needs.

The training of a student at Northeastern has always been conducted so that a graduate receives not only a B.B.A. degree, but an immediately applicable vocational training equipping him to fill a better position in some one business activity. For his future, he has the advantage of a thorough background of business methods and an appreciation of the problems of management, which, if properly used, may lead to advancement and executive responsibilities.

Staff of Instruction

The teaching staff of the School is recruited from business and professional leaders of New England business. The instructors are college-trained men who have proved their ability in their various fields of specialization. They are selected on the basis of their ability to convey knowledge to others in an interesting, inspiring, and effective manner. They are also chosen for the breadth of their training and experience.

Success of the Alumni

The best indication of the cumulative rewards to be won by pursuing a systematic program of study in spare evening hours is to be found in the records of Northeastern School of Business Alumni.

A study made just prior to the war covering all Boston graduates conclusively shows that better positions and increased incomes are directly traceable to the evening hours spent in preparation at Northeastern.

A portion of this study is the comparison of positions held by the alumni when they entered the School as freshmen with the positions they held at the time of the study.

ALUMNI POSITIONS

	Upon Entrance %	Date of Study %
Presidents and Other Corporation Officers	0.0	3.8
Owners of Business	1.0	13.1
Treasurers and Comptrollers	0.3	7.7
Accountants	7.0	16.9
Office Managers	1.6	7.4
Department Managers	2.9	11.5
Salesmen	3.8	3.8
Educators	8.6	7.0
Government Employees	2.6	7.7
Bookkeepers	18.8	1.3
Clerks	34.2	6.4
Factory Workers	5.8	2.2
Unemployed	2.9	1.9
Miscellaneous	10.5	9.3

This pronounced trend to better and more responsible positions is further substantiated by a study of the income of the same alumni group over the same period.

It was found that the alumni who had been out of the School of Business not more than ten years had increased their income an aggregate of 73.2%. For those who graduated more than ten years ago, this increase amounts to 223.6%. Another study of the income of students still in school shows that the average School of Business student begins his advancement in business and in income even while he is still at his training. On the average, the increase in income during the period of attendance more than covers tuition charges.

The Student Body

The character of a student body determines the standards which a school can maintain. Nothing is more essential to the success of an educational institution than a careful selection of incoming students. This principle applies just as readily to an evening school as to a day school. Standards are invariably adjusted to the average intelligence of the students. For this reason, Northeastern University School of Business maintains standards of admission which result in a student body capable of pursuing work of standard college grade during evening hours.

In 1950-1951 the student body consisted of 3817 men and women of widely varied ages and occupations. The youngest student was 19 years of age and the oldest 54 years. The average age was 26 years.

About two-thirds of the students are married men who have realized that if they are to increase their earning power they must fit themselves for advancement. That the training offered by the School has enabled the students to improve their earning capacities and enlarge their responsibilities is conclusively proved by a study which showed that students in the School substantially increased their incomes in the six-year period between entering the School and graduation.

Placement Service

For Students

Many requests from employers are received by the School, during normal times, for young men and women of potential ability to fill important clerical and junior executive positions. It is the policy of the School to serve the students whenever possible by placing them in those positions which promise attractive opportunities for development and advancement. The School, however, cannot guarantee to place its students, but it does endeavor to keep in close touch with those who desire placement service and to assist them in obtaining satisfactory advancements in positions and income. No charge is made for placement service. Those needing this assistance should file an application at the School Office.

For Graduates

While the School cannot guarantee positions to its graduates, the number of requests for men usually exceeds the number available in the graduating class of any given year. The policy of the School is to find the best equipped and qualified men and women among its graduates for the positions which the School is called upon to fill.

The School in recommending a graduate for a position furnishes the prospective employer with the facts as to the graduate's ability, character, attitudes, habits, and other qualifications for the position as revealed by the School records. In the last analysis, however, placement in a position depends quite largely upon the graduate's ability to sell his services to the prospective employer. Most employers prefer to consider two or more candidates for a position and generally request the School to suggest more than one person. Many manufacturing and commercial firms throughout New England call upon this School to assist them in filling important executive and managerial positions.

No charge is made for placement service.

School of Business

Programs of Instruction

THE SCHOOL OF BUSINESS in its undergraduate division aims to serve three classifications of students:

1. The Degree Candidate for either the Associate or Bachelor's Degree.
2. The Certificate Candidate, or student who needs a shorter program of courses in a well-defined area.
3. The Special Student, who is interested in one or more selected courses to meet specific needs.

Major programs of instruction are offered in the following fields:

Accounting

Degree curricula with specification in:

Public Accounting	See page 25
Commercial or Industrial Accounting	See page 26
Cost Accounting	See page 27

Management

Degree curricula with specification in:

Business Management	See page 28
Credit and Financial Management	See page 29
Industrial Management	See page 30
Insurance	See pages 31 and 32
Marketing and Advertising	See page 34
Office Management	See page 35
Personnel and Industrial Relations	See page 36
Production Management	See page 37
Real Estate	See page 38
Retailing	See page 39
Transportation and Traffic Management	See page 40

Engineering and Management

Degree curriculum with specification	See page 43
--	-------------

Law and Business

Degree curriculum with specification	See page 33
--	-------------

Public Administration

Degree curricula with specification in:

Municipal Management	See page 41
State and Federal Management	See page 42

Institute Programs

Certificate programs with specification in:

Institute of Credit and Financial Management	See page 44
Institute for Business and Professional Secretaries	See page 46
Institute of Insurance	See page 45
Institute of Municipal Management	See page 48
Institute of Retailing	See page 49
Institute of Transportation and Traffic Management	See page 50
Labor Relations Institute	See page 51
Office Management Institute	See page 52
Production Management Institute	See page 53
Quality Control Institute	See page 55
Real Estate Institute	See page 54
World Trade Institute	See page 56

Special Programs

The School will arrange special one-year, two-year, or longer programs of study to meet the needs of individual students. These special programs will be arranged upon consultation with the Dean.

Accounting

The Accounting Profession

Taxation, regulations governing qualifications for listing securities with the Securities and Exchange Commission, the stock exchanges, and other regulatory bodies, corporation laws affecting the preparation of financial reports, the needs of government and its many military and non-military agencies, and numerous other developments in the conduct of business have broadened the scope of accounting to such a degree that the supply of trained accountants is not adequate to meet the demand. Public accounting is a rapidly growing field and, with the increased emphasis which financial institutions are placing on certified financial statements, the need for college-trained Certified Public Accountants is increasing every year.

Opportunities in the field of accounting are many. Financial returns compare favorably with those of other professions such as law, medicine, and engineering. The normal development for those employed by an accounting firm is fairly well standardized from the position of junior accountant through those of senior and supervisor into firm membership. As a firm member, earnings may range from \$7,500 to \$25,000 a year and higher.

While the remuneration in the field of public accounting for properly trained men is attractive, the field of commercial and private accounting offers even greater inducement. The latest census figures show that there are 191,571 persons engaged as accountants and auditors in the United States. From trained accountants are selected many of the business and industrial executives, including office managers, comptrollers, treasurers, and other officers of business concerns. Salaries of treasurers and comptrollers vary from \$4,000 to \$15,000; office managers from \$3,000 to \$6,000; chief accountants from \$2,500 to \$7,500. Many senior accountants have advanced into responsible executive positions paying \$10,000 and more.

The Accounting Programs

Students of accounting in the School of Business may follow programs of training in this specialized subject which prepare them to take the examination for Certified Public Accountant (C.P.A.) or to carry on work of major responsibility in commercial accounting with private or public business firms.

Thoroughness of instruction is all-important. The trained accountant must be able to adapt himself quickly to the rapidly changing conditions of modern business. He should be ready to assume executive responsibility outside the field of accounting. This involves, of course, a background of understanding of various functions of business quite apart from the specialized accounting field.

Students may register for either the Associate Degree Program, which may be completed in four years, or for the B.B.A. Degree Program, which requires six years. The shorter program is comprised specifically of accounting courses. The two additional years required in the B.B.A. Degree Program, however, provide an opportunity to study managerial and administrative subjects which give one a broader basic understanding of business at large and equip him to assume responsibility in an executive capacity.

Accounting

Leading to the Degree of B.B.A. in Accounting

PUBLIC ACCOUNTING OPTION (C.P.A.)

FIRST YEAR			SECOND SEMESTER		
Course No.	First Semester	Semester Hours	Course No.	Second Semester	Semester Hours
E1	Business English.....	2½	E2	Business English.....	2½
A1-2	Introductory Accounting....	5	A3-4	Intermediate Accounting....	5
		7½			7½
SECOND YEAR			THIRD YEAR		
A5	Accounting Problems.....	2½	A6	Accounting Problems.....	2½
L13	Business Law I.....	2½	L14	Business Law II.....	2½
Ec1	Business Economics.....	2½	Ec2	Business Economics.....	2½
		7½			7½
THIRD YEAR			FOURTH YEAR		
A7	Advanced Acctg. Problems..	2½	A8	Advanced Acctg. Problems..	2½
L15	Business Law III.....	2½	A35	Mathematics of Accounting..	2½
A11	Fund Accounting.....	2½	OM1	Scientific Management.....	2½
		7½			7½
FOURTH YEAR			FIFTH YEAR		
A31	Analysis Financial Statements	2½	A32	Constructive Accounting ...	2½
A25	Auditing	2½	A26	Audit Practice.....	2½
Ec5	Money & Banking.....	2½	Ec6	Money & Banking.....	2½
		7½			7½
FIFTH YEAR			SIXTH YEAR		
Ec11	Business Finance.....	2½	Ec12	Business Finance.....	2½
A41	Basic Federal Taxes.....	2½	A42	Basic Federal Taxes.....	2½
A21	Cost Accounting.....	2½	A22	Cost Accounting.....	2½
		7½			7½
SIXTH YEAR			SEVENTH YEAR		
A9	C.P.A. Problems.....	5	A10	C.P.A. Problems.....	5
A43	Advanced Federal Taxes.....	2½	A44	Advanced Federal Taxes.....	2½
		7½			7½

The above is a suggested program of integrated courses for those wishing to train for public accounting by certifying through the C.P.A. examinations. The courses in heavy type are required in either the associate or bachelor's degree program. The courses in regular type are supporting courses which will, in most cases, best serve as electives. Upon approval of the dean, a limited substitution for supporting courses may be arranged from those suggested below to meet more adequately the training needs of the individual student.

		Semester Hours			Semester Hours
A27	Auditing, Internal.....	5	Ec13	Investment Principles.....	2½
Ec9-10	Business Plan. and Research	5	Ec14	Investment, Security Analysis	2½
Ec7-8	Business Statistics.....	5	D1-2	Marketing.....	5
In11-12	Casualty Insurance.....	5	T13-14	Motor Carrier Acctg.....	5
D33	Credit Fundamentals.....	2½	OM2	Office Org. & Administration	2½
D34	Credit Problems.....	2½	OM1	Office Prac., Scien. Mgmt..	2½
Ec22	Economics, International..	2½	OM4	Office Systems & Procedures	2½
PA37	Finance, Municipal.....	2½	IR11-12	Personnel Administration..	5
OM3	Forms Design and Control.	2½	RE1	Real Estate Fundamentals..	2½
In17-18	Fidelity, Suretyship, and		A45-46	Tax Planning.....	5
	Crime Insurance.....	5	IR8	Techniques of Supervision..	2½

For degree requirements, see page 87

Accounting

Leading to the Degree of B.B.A. in Accounting

COMMERCIAL OR INDUSTRIAL ACCOUNTING OPTION

FIRST YEAR			SECOND SEMESTER		
Course No.	First Semester	Semester Hours	Course No.	Second Semester	Semester Hours
E1	Business English.....	2½	E2	Business English.....	2½
A1-2	Introductory Accounting....	5	A3-4	Intermediate Accounting....	5
		<u>7½</u>			<u>7½</u>
SECOND YEAR					
A5	Accounting Problems.....	2½	A6	Accounting Problems.....	2½
L13	Business Law I.....	2½	L14	Business Law II.....	2½
Ec1	Business Economics.....	2½	Ec2	Business Economics.....	2½
		<u>7½</u>			<u>7½</u>
THIRD YEAR					
A7	Advanced Acctg. Problems..	2½	A8	Advanced Acctg. Problems..	2½
L15	Business Law III.....	2½	A35	Mathematics of Accounting.	2½
Ec5	Money & Banking.....	2½	Ec6	Money & Banking.....	2½
		<u>7½</u>			<u>7½</u>
FOURTH YEAR					
A25	Auditing.....	2½	A27	Internal Auditing.....	2½
A31	Analysis of Financial Statements	2½	A32	Constructive Accounting...	2½
Ec11	Business Finance.....	2½	Ec12	Business Finance.....	2½
		<u>7½</u>			<u>7½</u>
FIFTH YEAR					
A33	Budget Procedure.....	2½	A34	Controllorship.....	2½
Ec7	Statistics.....	2½	A22	Cost Accounting.....	2½
A21	Cost Accounting.....	2½	A11	Fund Accounting.....	2½
		<u>7½</u>			<u>7½</u>
SIXTH YEAR					
A41	Basic Federal Taxes.....	2½	A42	Basic Federal Taxes.....	2½
IM23	Management Probs. & Policies	2½	IM24	Management Probs. & Policies	2½
L16	Govt. Controls in Business...	2½	IR22	Labor-Management Relations.	2½
		<u>7½</u>			<u>7½</u>

The above is a suggested program of integrated courses for those wishing to train for accounting positions in commercial or industrial concerns. The courses in heavy type are required in either the associate or bachelor's degree program. The courses in regular type are supporting courses which, in most cases, will best serve as electives. To meet most adequately the specific training needs of the individual student, a limited substitution for the supporting courses suggested above may be arranged from those in the following list.

	Semester Hours		Semester Hours
E6	Business Conferences	Ec14	Investment Sec. Analysis...
Ec9-10	Business Plan. and Research	D1-2	Marketing.....
In11-12	Casualty Insurance.....	T13-14	Motor Carrier Acctg.....
D33	Credit Fundamentals.....	OM2	Office Org. & Administration
D34	Credit Problems.....	OM1	Office Prac., Scien. Mgmt. ...
Ec22	Economics, International...	OM4	Office Systems & Procedures
In17	Fidelity Insurance	IR11-12	Personnel Administration...
PA37	Finance, Municipal.....	IR5	Psychology
Ec17	Finance, Public.....	RE1	Real Estate Fundamentals ..
OM3	Forms Design and Control...	A45-46	Tax Planning.....
Ec13	Investment Principles.....	IR8	Techniques of Supervision.

For degree requirements, see page 87

Accounting

Leading to the Degree of B.B.A. in Accounting

COST ACCOUNTING OPTION

FIRST YEAR			SECOND SEMESTER		
Course No.	First Semester	Semester Hours	Course No.	Second Semester	Semester Hours
E1	Business English.....	2½	E2	Business English.....	2½
A1-2	Introductory Accounting....	5	A3-4	Intermediate Accounting....	5
		7½			7½
SECOND YEAR			THIRD YEAR		
A5	Accounting Problems.....	2½	A6	Accounting Problems.....	2½
L13	Business Law I.....	2½	L14	Business Law II.....	2½
Ec1	Business Economics.....	2½	Ec2	Business Economics.....	2½
		7½			7½
A7	Advanced Acctg. Problems..	2½	A8	Advanced Acctg. Problems..	2½
L15	Business Law III.....	2½	A35	Mathematics of Accounting..	2½
L16	Govt. Controls in Business...	2½	IM12	Prod. Planning & Control....	2½
		7½			7½
FOURTH YEAR			FIFTH YEAR		
A25	Auditing.....	2½	A27	Internal Auditing.....	2½
Ec5	Money & Banking.....	2½	Ec6	Money & Banking.....	2½
A31	Analysis of Financial Statements	2½	A32	Constructive Accounting....	2½
		7½			7½
A33	Budget Procedure.....	2½	A34	Controllershship.....	2½
A21	Cost Accounting.....	2½	A22	Cost Accounting.....	2½
Ec11	Business Finance.....	2½	Ec12	Business Finance.....	2½
		7½			7½
SIXTH YEAR			SIXTH YEAR		
A41	Basic Federal Taxes.....	2½	A42	Basic Federal Taxes.....	2½
IM23	Management Probs. & Policies	2½	IM24	Management Probs. & Policies	2½
A23	Advanced Cost Accounting.	7½	A24	Advanced Cost Accounting .	2½
		7½			7½

The program suggested above is designed for those who are specifically interested in training for the field of cost accounting. The courses in heavy type are required in either the associate or bachelor's degree program. The courses in regular type are supporting courses which, in most cases, will best serve as electives. To meet most adequately the specific training needs of the individual student, a limited substitution for the supporting courses suggested above may be arranged from those in the following list.

		Semester Hours			Semester Hours
Ec9-10	Business Plan. and Research	5	Ec14	Invest. Security Analysis...	2½
In11-12	Casualty Insurance.....	5	IR22	Labor-Management Relations	2½
D33	Credit Fundamentals.....	2½	D1-2	Marketing.....	5
D34	Credit Problems.....	2½	T13-14	Motor Carrier Acctg.....	5
Ec22	Economics, International..	2½	OM2	Office Org. & Administration	2½
PA37	Finance, Municipal.....	2½	OM1	Office Prac., Scien. Mgmt. .	2½
Ec17	Finance, Public.....	2½	OM4	Office Systems & Procedures	2½
OM3	Forms Design and Control..	2½	IR11-12	Personnel Administration..	5
Ec13	Investment Principles.....	2½	RE1	Real Estate Fundamentals..	2½
In17-18	Fidelity, Suretyship and		A45-46	Tax Planning.....	5
	Crime Insurance.....	2½	IR8	Techniques of Supervision..	2½

For degree requirements, see page 87

Management

Leading to the Degree of B.B.A. in Management

BUSINESS MANAGEMENT OPTION

		FIRST YEAR			
Course No.	First Semester	Semester Hours	Course No.	Second Semester	Semester Hours
E1	Business English.....	2½	E2	Business English.....	2½
A13	Managerial Accounting.....	2½	A14	Managerial Accounting.....	2½
L5	Contracts.....	2½	L6	Contracts.....	2½
		7½			7½

		SECOND YEAR			
Course No.	First Semester	Semester Hours	Course No.	Second Semester	Semester Hours
Ec1	Business Economics.....	2½	Ec2	Business Economics.....	2½
L7	Corp'ns, Partnership, Agency	2½	L8	Corp'ns, Partnership, Agency	2½
D1	Marketing.....	2½	D2	Marketing.....	2½
		7½			7½

		THIRD YEAR			
Course No.	First Semester	Semester Hours	Course No.	Second Semester	Semester Hours
L9	Law of Sales.....	2½	RE1	Real Estate Fundamentals...	2½
Ec5	Money & Banking.....	2½	Ec6	Money & Banking.....	2½
OM1	Scientific Management.....	2½	OM2	Off. Organ. & Admin.	2½
		7½			7½

		FOURTH YEAR			
Course No.	First Semester	Semester Hours	Course No.	Second Semester	Semester Hours
L11	Negotiable Instruments.....	2½	L12	Creditors' Rights.....	2½
OM3	Forms Design.....	2½	OM4	Off. Sys. & Procedures.....	2½
Ec7	Statistics.....	2½	Ec8	Statistics.....	2½
		7½			7½

		FIFTH YEAR			
Course No.	First Semester	Semester Hours	Course No.	Second Semester	Semester Hours
L16	Govt. Cont. in Bus.....	2½	D33	Credit Fundamentals.....	2½
IR22	Labor-Mgmt. Relations.....	2½	IR8	Tech. of Supervision.....	2½
Ec11	Business Finance.....	2½	Ec12	Business Finance.....	2½
		7½			7½

		SIXTH YEAR			
Course No.	First Semester	Semester Hours	Course No.	Second Semester	Semester Hours
Ec9	Bus. Plng. & Research.....	2½	Ec10	Bus. Plng. & Research.....	2½
IM23	Management Probs. & Pols. ..	2½	IM24	Management Probs. & Pols. ..	2½
IR11	Personnel Administration — Human Relations.....	2½	IR12	Personnel Administration — Human Relations.....	2½
		7½			7½

For those planning careers in the management areas of business, the above is an integrated program of suggested courses. The courses in heavy type are required in either the associate or bachelor's degree program. Those in regular type will, in most cases, serve as most effective supporting courses. However, to meet more adequately the specific training needs of the individual student, a limited substitution for these supporting courses may be selected from those listed below.

A15-16 Cost Accounting, Managerial
D10 Advertising Principles
D11 Advertising Problems
E6 Business Conferences
D34 Credit Problems
Ec21 Economic Geography
Ec22 Economics, International
D21-22 Foreign Trade
Ec13 Investment Principles

Ec14 Invest., Sec. Analysis
D36 Management of Small Business
D7 Market Research
IR13 Personnel Mgmt. Practices
D3 Principles of Selling
IM12 Prod. Plg. & Control
IR5 Psychology for Business
E5 Public Speaking
D31 Purchasing
IR6 Training Methods

For degree requirements, see page 87

Management

Leading to the B.B.A. Degree in Management

CREDIT AND FINANCIAL MANAGEMENT OPTION

FIRST YEAR			FIRST YEAR		
Course No.	First Semester	Semester Hours	Course No.	Second Semester	Semester Hours
E1	Business English.....	2½	E2	Business English.....	2½
A13	Managerial Acctg.....	2½	A14	Managerial Acctg.....	2½
L5	Contracts.....	2½	L6	Contracts.....	2½
		7½			7½
SECOND YEAR					
Ec1	Business Economics.....	2½	Ec2	Business Economics.....	2½
L7	Corp. Part. Agcy.....	2½	L8	Corp. Part. Agcy.....	2½
D1	Marketing.....	2½	D2	Marketing.....	2½
		7½			7½
THIRD YEAR					
Ec5	Money and Banking.....	2½	Ec6	Money and Banking.....	2½
A31	Anal. of Fin. Statements.....	2½	D3	Principles of Selling.....	2½
L11	Negotiable Instruments.....	2½	L12	Creditors' Rights.....	2½
		7½			7½
FOURTH YEAR					
Ec11	Business Finance.....	2½	Ec12	Business Finance.....	2½
L9	Law of Sales.....	2½	IR5	Psychology.....	2½
OM1	Sci. Mgmt., Off. Prac.	2½	OM2	Office Org. & Admin.	2½
		7½			7½
FIFTH YEAR					
D33	Credit Fundamentals.....	2½	D34	Adv. Credits & Problems ...	2½
Ec7	Bus. Statistics.....	2½	Ec8	Bus. Statistics.....	2½
Ec13	Investment Principles.....	2½	Ec14	Security Analysis.....	2½
		7½			7½
SIXTH YEAR					
Ec9	Bus. Plng. & Research.....	2½	Ec10	Bus. Plng. & Research.....	2½
Ec15	Applied Sec. Analysis.....	2½	Ec16	Applied Sec. Analysis.....	2½
IR8	Tech. Supervision.....	2½	Ec22	International Econ.....	2½
		7½			7½

The suggested program above is designed for those training for positions in credit departments. The curriculum is designed as preparation for the examination requirements for the Associate and Fellow Awards of the National Institute of Credit. The courses in heavy type are required in either the associate or bachelor's degree program. Those in regular type are suggested as most effective supporting courses. However, to meet more adequately the specific training needs of the individual student, a limited substitution for these supporting courses may be arranged from those listed below.

D10 Advertising Principles
 D11 Advertising Problems
 E6 Business Conferences
 A15-16 Cost Accounting, Managerial
 R6 Credit, Retail
 Ec21 Economic Geography
 Ec22 Economics, International
 In17-18 Fidelity, Suretyship, and Crime Insurance
 Ec17 Finance, Public
 D23 Foreign Trade, Legal Aspects

D21-22 Foreign Trade, Prin. & Prac.
 L16 Government Controls
 G200 History of Economic Thought
 Ec13 Investment Principles
 Ec14 Invest., Sec. Analysis
 IM23 Management Problems & Policies
 D36 Management Small Business
 D7 Market Research
 IR11-12 Personnel Administration
 IR5 Psychology for Business
 E5 Public Speaking
 D31 Purchasing
 R6 Retail Credit

For degree requirements, see page 87

Management

Leading to the Degree of B.B.A. in Management

INDUSTRIAL MANAGEMENT OPTION

		FIRST YEAR			
Course No.	First Semester	Semester Hours	Course No.	Second Semester	Semester Hours
E1	Business English.....	2½	E2	Business English.....	2½
IM1	Work Simplification I.....	2½	IM5	Time Study I.....	2½
A17	Industrial Acctg.....	2½	A18	Industrial Acctg.....	2½
		7½			7½

SECOND YEAR					
Ec1	Business Economics.....	2½	Ec2	Business Economics.....	2½
IM2	Work Simplification II.....	2½	IM6	Time Study II.....	2½
IM15	Production Processes.....	2½	IM16	Production Processes.....	2½
		7½			7½

THIRD YEAR					
L13	Law I.....	2½	L14	Law II.....	2½
Ec5	Money and Banking.....	2½	Ec6	Money and Banking.....	2½
IM9	Job Evaluation.....	2½	IM10	Synthetic Time Stds. (M.T.M.)	2½
		7½			7½

FOURTH YEAR					
L15	Law III.....	2½	IM21	Industrial Safety.....	2½
IM17	Materials Handling.....	2½	IM12	Production Control.....	2½
Ec7	Statistics.....	2½	IM13	Quality Control.....	2½
		7½			7½

FIFTH YEAR					
IR22	Labor-Mgmt. Relations.....	2½	IM8	Techniques of Supervision....	2½
IM19	Plant Layout.....	2½	IM20	Plant Layout.....	2½
IR11	Personnel Administration— Human Relations.....	2½	IR12	Personnel Administration— Human Relations.....	2½
		7½			7½

SIXTH YEAR					
IM23	Mgmt. Probs. & Pols.....	2½	IM24	Mgmt. Probs. & Pols.....	2½
IR23	Lab. Legislation — Union- Management Relations.....	2½	IR24	Labor Legislation — Stds. & Cond. Employment.....	2½
L16	Govt. Controls in Bus.....	2½	IR9	Wage Administration.....	2½
		7½			7½

The above is a suggested program of courses properly integrated to provide training for employment in the manufacturing areas of industrial production. The courses in heavy type are required in either the associate or bachelor's degree program. Those in regular type are suggested as most effective supporting courses. However, to meet more adequately the specific training needs of the individual student, a limited substitution for these supporting courses may be arranged from those listed below.

IM3	Basic Technology for Production	IR13	Personnel Mgmt. Practices
E6	Business Conferences	IM27	Plant Maintenance
Ec9-10	Business Planning & Research	IR5	Psychology for Bus. & Indus.
In11	Cas. Insurance (Workmen's Comp.)	D31	Purchasing
IM17	Ind. Inspection & Mats. Prod.	E5	Public Speaking
In13-14	Fire Insurance & Allied Lines	IM14	Quality Control — Advanced
IR25	Labor Agreement	T1	Transportation Principles
D1-2	Marketing	IR6	Training Methods

For degree requirements, see page 87

Management

Leading to the Degree of B.B.A. in Management

INSURANCE OPTION

FIRST YEAR					
Course No.	First Semester	Semester Hours	Course No.	Second Semester	Semester Hours
A13	Accounting, Managerial.....	2½	A14	Accounting, Managerial.....	2½
L5	Contracts.....	2½	L6	Contracts.....	2½
In1	Fund. of Insurance.....	2½	In2	Fund. of Insurance.....	2½
		7½			7½
SECOND YEAR					
L7	Corp., Part., Agency.....	2½	L8	Corp., Part., Agency.....	2½
PA1	American Government.....	2	PA2	American Government.....	2
E1	English I.....	2	E2	English I.....	2
In11	Casualty Insurance.....	2½	In12	Casualty Insurance.....	2½
		9			9
THIRD YEAR					
L9	Law of Sales.....	2½	RE2	Real Estate Law & Convey. . .	2½
In13	Fire and Allied Lines.....	2½	In14	Fire and Allied Lines.....	2½
Ec1	Business Economics.....	2½	Ec2	Business Economics.....	2½
		7½			7½
FOURTH YEAR					
L11	Negotiable Instruments.....	2½	L12	Creditors' Rights.....	2½
In15	Inland Marine Insurance....	2½	In16	Inland Marine Insurance....	2½
Ec7	Statistics.....	2½	Ec8	Statistics.....	2½
		7½			7½
FIFTH YEAR					
In17	Fidel., Surety. & Crime Ins..	2½	In18	Fidel., Surety. & Crime Ins..	2½
In21	Life Insurance.....	2½	In22	Life Insurance.....	2½
Ec5	Money & Banking.....	2½	Ec6	Money & Banking.....	2½
		7½			7½
SIXTH YEAR					
In27	Business Insurance.....	2½	In28	Business Insurance.....	2½
In5	Claims Procedures.....	2½	IR24	Labor Leg. — Social Insurance .	2½
L16	Government Controls.....	2½	IR22	Labor-Mgmt. Relations.....	2½
		7½			7½

The above is a suggested program of integrated courses for those training for careers in one of the several areas of insurance. The courses in heavy type are required in either the associate or bachelor's degree program. Those in regular type will, in most cases, serve as most effective supporting courses. However, to meet more adequately the specific training needs of the individual student, a limited substitution for these supporting courses may be selected from those listed below.

D10	Advertising Principles	OM2	Office Organ. & Admin.
E6	Business Conferences	IR11-12	Personnel Admin. — Human Relations
A15-16	Cost Accounting, Managerial	D3	Principles of Selling
E3	English, Business Reports	IR5	Psychology of Business & Industry
A41-42	Federal Taxes, Basic	E5	Public Speaking
IR7	Industrial Sociology	RE1	Real Estate Fundamentals
Ec13	Investment Principles	RE7	Real Estate Finance
IM23-24	Management Problems & Policies	RE5	Real Estate Management
D36	Management of Small Business Enterprise	OM1	Scien. Mgmt., Office Practice
D1-2	Marketing	IR8	Techniques of Supervision

For degree requirements, see page 87

Management

Leading to the B.B.A. Degree in Management

INSURANCE OPTION

Designed as Preparation for C.P.C.U. Examinations

FIRST YEAR					
Course No.	First Semester	Semester Hours	Course No.	Second Semester	Semester Hours
In1	Fundamentals of Insurance..	2½	In2	Fundamentals of Insurance..	2½
In11	Casualty Insurance.....	2½	In12	Casualty Insurance.....	2½
In13	Fire Ins. & Allied Lines.....	2½	In14	Fire Ins. & Allied Lines.....	2½
		7½			7½

SECOND YEAR					
In17	Fidel., Surety. & Crime Ins. .	2½	In18	Fidel., Surety. & Crime Ins. .	2½
In15	Inland Marine Insurance....	2½	In16	Inland Marine Insurance....	2½
Ec7	Statistics.....	2½	D3	Principles of Selling.....	2½
		7½			7½

Comprehensive Review for C.P.C.U. Examinations — Parts I & II
Scheduled toward close of Second Semester

THIRD YEAR					
Ec1	Business Economics.....	2½	Ec2	Business Economics.....	2½
E1	English I.....	2	E2	English I.....	2
PA1	American Government.....	2	PA2	American Government.....	2
L13	Law I.....	2½	IR24	Labor Legis.-Social Ins.....	2½
		9			9

Comprehensive Review for C.P.C.U. Examination — Part III
Scheduled toward close of Second Semester

FOURTH YEAR					
L14	Law II.....	2½	L15	Law III.....	2½
RE2	Real Estate Law.....	2½	IM21	Industrial Safety.....	2½
L16	Gov. Controls in Business.....	2½	Ec22	International Economics.....	2½
		7½			7½

Comprehensive Review for C.P.C.U. Examination — Part IV
Scheduled toward close of Second Semester

FIFTH YEAR					
A13	Managerial Accounting.....	2½	A14	Managerial Accounting.....	2½
OM2	Office Organ. & Admin.....	2½	Ec17	Public Finance.....	2½
Ec5	Money & Banking.....	2½	Ec6	Money & Banking.....	2½
		7½			7½

SIXTH YEAR					
In27	Business Insurance.....	2½	In28	Business Insurance.....	2½
G200	History of Economic Thought.	2½	In5	Claims Procedure.....	2½
Ec11	Business Finance.....	2½	Ec12	Business Finance.....	2½
		7½			7½

Comprehensive Review for C.P.C.U. Examination — Part V
Scheduled toward close of Second Semester

The courses comprising the above curriculum are specifically chosen to satisfy certain requirements of the Chartered Property and Casualty Underwriters (C.P.C.U.) Examinations. Substitutions for supporting courses may be arranged as long as the degree requirements are not violated. However, the student must appreciate the effects of such changes upon his preparation for the Examinations.

For degree requirements, see page 87

LAW AND BUSINESS

Leading to the Degree of B.B.A. in Law and Business

FIRST YEAR					
Course No.	First Semester	Semester Hours	Course No.	Second Semester	Semester Hours
A1-2	Introductory Accounting....	5	A3-4	Intermediate Accounting. ...	5
L5	Contracts.....	2½	L6	Contracts.....	2½
		7½			7½
SECOND YEAR					
L9	Law of Sales.....	2½	RE2	Real Estate Law & Convey...	2½
Ec1	Business Economics.....	2½	Ec2	Business Economics.....	2½
RE1	Real Estate Fundamentals.....	2½	IR22	Labor-Management Relations	2½
		7½			7½
THIRD YEAR					
L7	Corp., Part., Agency.....	2½	L8	Corp., Part., Agency.....	2½
E1	Business English.....	2½	E2	Business English.....	2½
Ec5	Money & Banking.....	2½	Ec6	Money & Banking.....	2½
		7½			7½
FOURTH YEAR					
L11	Negotiable Instruments.....	2½	L12	Creditors' Rights.....	2½
D33	Credit Fundamentals.....	2½	L16	Government Controls.....	2½
A41	Federal Taxes.....	2½	A42	Federal Taxes.....	2½
		7½			7½
FIFTH YEAR					
A43	Adv. Federal Taxes.....	2½	A44	Adv. Federal Taxes.....	2½
IR23	Labor Legislation — Union-Mgmt. Rel.....	2½	IR25	Labor Contract.....	2½
Ec11	Business Finance.....	2½	Ec12	Business Finance.....	2½
		7½			7½
SIXTH YEAR					
A45	Tax Planning.....	2½	A46	Tax Planning.....	2½
Ec9	Business Planning & Research.	2½	Ec10	Business Planning & Research.	2½
IM23	Mgmt. Probs. and Policies....	2½	IM24	Mgmt. Probs. and Policies...	2½
		7½			7½

This curriculum combines a sound program of business law with the principles of management as preparation for careers in the field of business. Students taking courses in this program to satisfy pre-legal requirements should avoid all "L" courses.

The courses in heavy type are required in either the associate or bachelor's degree program. Those in regular type are suggested as most effective supporting courses. However, to meet more adequately the specific training needs of the individual student, a limited substitution for these supporting courses may be arranged from those listed below.

PA41	Assessing Principles	IN17-18	Fidelity, Suretyship & Crime Ins.
E6	Business Conferences	IN13-14	Fire Insurance and Allied Lines
Ec7	Business Statistics	PA9	International Politics
IN11-12	Casualty Insurance	Ec13	Investment Principles
A21-22	Cost Accounting	Ec14	Investments, Security Analysis
PA5-6	Constitutional History, England	PA38	Law, Municipal
D34	Credit Problems	D1-2	Marketing
PA25-26	Criminology	PA35	Municipal Accounting
Ec22	Economics, International	OM2	Office Organization & Admin.
PA37	Finance, Municipal	PA7	Political Parties
RE7	Finance, Real Estate	PA10	Political Theory
PA1-2	Government, American	E5	Public Speaking
PA3-4	Government, Comparative	PA23	Sociology
PA21-22	History, United States	PA24	Social Problems & Pathology

For degree requirements, see page 87

Management

Leading to the Degree of B.B.A. in Management

MARKETING — SALES AND ADVERTISING

FIRST YEAR			SECOND SEMESTER		
Course No.	First Semester	Semester Hours	Course No.	Second Semester	Semester Hours
E1	Business English.....	2½	E2	Business English.....	2½
A13	Managerial Accounting.....	2½	A14	Managerial Accounting.....	2½
L5	Contracts.....	2½	L6	Contracts.....	2½
		7½			7½
SECOND YEAR					
Ec1	Business Economics.....	2½	Ec2	Business Economics.....	2½
L9	Law of Sales.....	2½	D3	Principles of Selling.....	2½
D1	Marketing.....	2½	D2	Marketing.....	2½
		7½			7½
THIRD YEAR					
L7	Corp'ns, Partnership, Agency	2½	L8	Corp'ns, Partnership, Agency	2½
D10	Advertising Principles.....	2½	D11	Advertising Problems.....	2½
Ec5	Money & Banking.....	2½	Ec6	Money & Banking.....	2½
		7½			7½
FOURTH YEAR					
Ec21	Economic Geography.....	2½	Ec22	International Economics.....	2½
Ec7	Business Statistics.....	2½	Ec8	Business Statistics.....	2½
L11	Negotiable Instruments.....	2½	L12	Creditors' Rights.....	2½
		7½			7½
FIFTH YEAR					
D33	Credit Fundamentals.....	2½	T1	Principles of Transportation...	2½
D21	Foreign Trade.....	2½	D22	Foreign Trade.....	2½
D15	Advertising Copy.....	2½	D16	Advertising Production.....	2½
		7½			7½
SIXTH YEAR					
D17	Advertising Media.....	2½	D6	Sales Promotion.....	2½
D7	Market Research.....	2½	D5	Sales Management.....	2½
Ec9	Bus. Planning and Research.	2½	Ec10	Bus. Planning and Research.	2½
		7½			7½

The program of courses suggested above is designed to train those who are planning careers in one of the several areas of distribution.

The courses in heavy type are required in either the associate or bachelor's degree program. Those in regular type are suggested as most effective supporting courses. However, to meet more adequately the specific training needs of the individual student, a limited substitution for these supporting courses may be arranged from those listed below.

E6	Business Conferences	D36	Mgmt. Small Business Enterprise
Ec11-12	Business Finance	OM2	Office Organization & Admin.
A15-16	Cost Accounting, Managerial	D9	Packaging
D34	Credit Problems	IR11-12	Per. Admin. — Human Relations
R6	Credit, Retail	IR5	Psychology for Business
D24	Foreign Marketing	E5	Public Speaking
PA8	Foreign Policy, American	D31	Purchasing
D23	Foreign Trade, Legal Aspects	RE1	Real Estate Fundamentals
L16	Government Controls	RE2	Real Estate Law and Conveyancing
E9-10	Industrial Journalism	R1	Retail Store Buying
Ec13	Investment Principles	R2	Retail Store Merchandising
Ec14	Investments, Security Analysis	IR8	Techniques of Supervision
IR22	Labor-Management Relations	T3	Traffic Management
IM23-24	Management Problems and Policies		

For degree requirements, see page 87

Management

Leading to the Degree of B.B.A. in Management

OFFICE MANAGEMENT OPTION

FIRST YEAR					
Course No.	First Semester	Semester Hours	Course No.	Second Semester	Semester Hours
E1	Business English.....	2½	E2	Business English.....	2½
L5	Contracts.....	2½	L6	Contracts.....	2½
A13	Managerial Accounting.....	2½	A14	Managerial Accounting.....	2½
		7½			7½
SECOND YEAR					
Ec1	Business Economics.....	2½	Ec2	Business Economics.....	2½
L7	Corp., Partnership, Agency..	2½	L8	Corp., Partnership, Agency..	2½
OM1	Scientific Mgmt., Office Prac.	2½	OM2	Office Organ. & Admin.	2½
		7½			7½
THIRD YEAR					
L9	Law of Sales.....	2½	RE1	Real Estate Fundamentals. ..	2½
D33	Credit Fundamentals.....	2½	D34	Credit Problems.....	2½
Ec5	Money & Banking.....	2½	Ec6	Money & Banking.....	2½
		7½			7½
FOURTH YEAR					
Ec7	Statistics.....	2½	IR8	Techniques of Supervision...	2½
In11	Cas. Insurance (Work. Comp.).	2½	D31	Purchasing.....	2½
L11	Negotiable Instruments.....	2½	L12	Creditors' Rights.....	2½
		7½			7½
FIFTH YEAR					
OM3	Forms Design & Control.....	2½	OM4	Office Systems & Procedures	2½
IR11	Per. Admin. — Human Rela.	2½	IR12	Per. Admin. — Human Rela.	2½
Ec9	Bus. Planning & Research...	2½	Ec10	Bus. Planning & Research..	2½
		7½			7½
SIXTH YEAR					
IM23	Mgmt. Probs. & Policies.	2½	IM24	Mgmt. Probs. & Policies	2½
IR22	Labor-Management Relations .	2½	IR24	Labor Legis. — Standards & Conditions of Employment .	2½
IR13	Personnel Man. Practice.....	2½	IR14	Practical Training Methods..	2½
		7½			7½

The professional field of office management requires special training in modern scientific principles of management. The suggested program above provides an integration of courses as training for this important function of business management. The courses in heavy type are required in either the associate or bachelor's degree program. Those in regular type are suggested as most effective supporting courses. However, to meet more adequately the specific training needs of the individual student, a limited substitution for these supporting courses may be arranged from those listed below.

D10	Advertising Principles	E9-10	Industrial Journalism
E6	Business Conferences	Ec13	Investment Principles
Ec11-12	Business Finance	Ec14	Investments, Security Analysis
A15-16	Cost Accounting, Managerial	IM9	Job Analysis & Evaluation
R6	Credit, Retail	D1-2	Marketing
IR15	Employment Testing	IR5	Psychology for Business & Industry
In17-18	Fidelity, Suretyship, and Crime Insurance	E5	Public Speaking
L16	Government Controls	D3	Principles of Selling
		IR6	Training Methods

For degree requirements, see page 87

Management

Leading to the Degree of B.B.A. in Management

PERSONNEL AND INDUSTRIAL RELATIONS OPTION

FIRST YEAR			SECOND SEMESTER		
Course No.	First Semester	Semester Hours	Course No.	Second Semester	Semester Hours
E1	Business English.....	2½	E2	Business English.....	2½
Ec1	Business Economics.....	2½	Ec2	Business Economics.....	2½
IM1	Work Simplification I.....	2½	IM5	Time Study I.....	2½
		7½			7½
SECOND YEAR					
A13	Managerial Accounting.....	2½	A14	Managerial Accounting.....	2½
IM9	Job Analysis & Evaluation..	2½	IR24	Labor Leg.—Stds. & Cond. of	2½
IR22	Labor-Management Relations	2½		Employment.....	2½
		7½	IM6	Time Study II (M.T.M.)....	2½
					7½
THIRD YEAR					
L13	Law I.....	2½	L14	Law II.....	2½
IR23	Lab. Leg.—Union-Mgmt. Rel.	2½	IR5	Industrial Psychology.....	2½
Ec5	Money & Banking.....	2½	Ec6	Money & Banking.....	2½
		7½			7½
FOURTH YEAR					
L15	Law III.....	2½	IR25	The Labor Agreement	2½
Ec7	Statistics.....	2½	Ec8	Statistics.....	2½
IR11	Per. Admin. — Human Rela.	2½	IR12	Per. Admin. — Human Rela.	2½
		7½			7½
FIFTH YEAR					
IR13	Personnel Management Practices	2½	IR6	Practical Training Methods .	2½
In11	Cas. Ins. (Workmen's Comp.)	2½	IM21	Industrial Safety	2½
IM8	Techniques of Supervision ..	2½	IR15	Empl. Test.—Selec. & Place.	2½
		7½			7½
SIXTH YEAR					
IR7	Industrial Sociology.....	2½	IR27	Labor Relations Seminar....	2½
L16	Government Controls.....	2½	IR9	Wage Administration.....	2½
OM2	Office Organ. & Admin.....	2½	E9-10	Industrial Journalism.....	2½
		7½			7½

The above is a suggested program of courses integrated so as to provide understanding of principles underlying sound human relations policies. The courses in heavy type are required in either the associate or bachelor's degree program. Those in regular type will in most cases serve as most effective supporting courses. However, to meet more adequately the specific training needs of the individual student, a limited substitution for the supporting courses may be selected from those courses listed below.

E6 Business Conferences
 Ec11-12 Business Finance
 Ec9-10 Business Planning and Research
 A15-16 Cost Accounting, Managerial
 PA25-26 Criminology
 Ec13 Investment Principles
 Ec14 Investments, Security Analysis

IM23-24 Management Problems and Policies
 D1-2 Marketing
 OM1 Office Mgmt., Scientific Mgmt.
 D3 Principles of Selling
 IM12 Production Control
 E5 Public Speaking
 PA23 Sociology

For degree requirements, see page 87

Management

Leading to the Degree of B.B.A. in Management

PRODUCTION MANAGEMENT OPTION

FIRST YEAR			SECOND SEMESTER		
Course No.	First Semester	Semester Hours	Course No.	Second Semester	Semester Hours
IM3	Basic Technology for Prod. .	2½	IM7	Ind. Insp. and Mat. of Prod..	2½
IM1	Work Simplification I.	2½	IM5	Time Study I.	2½
E1	Business English.	2½	E2	Business English.	2½
		7½			7½

SECOND YEAR					
IM15	Production Processes.	2½	IM16	Production Processes.	2½
A17	Industrial Accounting.	2½	A18	Industrial Accounting.	2½
IM2	Work Simplification II.	2½	IM6	Time Study II.	2½
		7½			7½

THIRD YEAR					
IM10	Synthetic Time Std. (M.T.M.)	2½	IM12	Production Planning & Con.	2½
IM9	Job Analysis & Evaluation ..	2½	IM21	Industrial Safety.	2½
Ec7	Bus. and Ind. Statistics I.	2½	IM13	Quality Control in Industry.	2½
		7½			7½

FOURTH YEAR					
IM25	Estimating for Production.	2½	IM26	Estimating for Production.	2½
IM17	Materials Handling.	2½	D31	Purchasing.	2½
Ec1	Business Economics.	2½	Ec2	Business Economics.	2½
		7½			7½

FIFTH YEAR					
IM19	Plant Layout.	2½	IM20	Plant Layout.	2½
IR5	Psy. for Bus. & Industry	2½	IR8	Techniques of Supervision ..	2½
IR11	Personnel Admin.— Human Relations.	2½	IR12	Personnel Admin.— Human Relations.	2½
		7½			7½

SIXTH YEAR					
IM27	Plant Maintenance.	2½	IR6	Pract. Training Methods	2½
IR22	Labor-Mgmt. Relations.	2½	IR25	Labor Agreement.	2½
IM23	Management Probs. & Pols..	2½	IM24	Management Probs. & Pols. .	2½
		7½			7½

For those engaged in or planning careers directly related to the plant ends of production, the above suggested curriculum would in most cases provide a most adequate program of training. The courses in heavy type are required in either the associate or bachelor's degree program. Those in regular type are suggested as effective supporting courses. A limited substitution for these supporting courses, however, may be arranged from those listed below whereby the specific training needs of the individual student may be more adequately met.

IM14	Adv. Quality Control	IR7	Industrial Sociology
E6	Business Conferences	IR23	Lab. Leg.—Union-Mgmt. Relations
Ec8	Bus. & Indus. Statistics II	IR24	Lab. Leg.—Stdts. & Cond. of Emp.
Ec9-10	Bus. Planning & Research	D1-2	Marketing
In11	Casualty Insurance — Workmen's Comp.	OM2	Office Organization & Administration
L5-6	Contracts	IR13	Personnel Mgmt. & Practices
E11-12	Financial Organization	E5	Public Speaking
L16	Government Controls	T1	Transportation Practices
IM22	Industrial Experimentation	IR9	Wage Administration

For degree requirements, see page 87

Management

Leading to the Degree of B.B.A. in Management

REAL ESTATE MANAGEMENT OPTION

FIRST YEAR			SECOND SEMESTER		
Course No.	First Semester	Semester Hours	Course No.	Second Semester	Semester Hours
E1	Business English.....	2½	E2	Business English.....	2½
A13	Accounting, Managerial.....	2½	A14	Accounting, Managerial.....	2½
E5	Public Speaking.....	2½	D3	Principles of Selling.....	2½
		7½			7½
SECOND YEAR			THIRD YEAR		
Ec1	Business Economics.....	2½	Ec2	Business Economics.....	2½
A15	Cost Accounting, Managerial..	2½	A16	Cost Accounting, Managerial..	2½
D1	Marketing.....	2½	D2	Marketing.....	2½
		7½			7½
RE1	Real Estate Fundamentals....	2½	RE2	Real Est. Law & Convey....	2½
D10	Principles of Advertising.....	2½	IR5	Psy. for Bus. & Industry.....	2½
Ec5	Money & Banking.....	2½	Ec6	Money & Banking.....	2½
		7½			7½
FOURTH YEAR			FIFTH YEAR		
RE11	Real Est. App. — Residential	2½	RE13	Real Est. App. — Commercial	2½
L13	Business Law I.....	2½	L14	Business Law II.....	2½
Ec13	Investment Principles.....	2½	Ec7	Statistics.....	2½
		7½			7½
L15	Business Law III.....	2½	RE5	Real Est. Invest. & Mgmt....	2½
In13	Fire Ins. and Allied Lines.	2½	In14	Fire Ins. and Allied Lines.....	2½
RE7	Real Estate Finance.....	2½	D33	Credit Fundamentals.....	2½
		7½			7½
SIXTH YEAR					
In11	Casualty Insurance.....	2½	In12	Casualty Insurance.....	2½
Ec9	Bus. Planning & Research....	2½	Ec10	Bus. Planning & Research....	2½
RE9	Real Est. Sales & Adver.....	2½	RE6	Operating a Real Estate Bus..	2½
		7½			7½

The above is a suggested program of integrated courses providing practical instruction for those working in or planning careers in the field of real estate. The courses in heavy type are required in either the associate or bachelor's degree program. Those in regular type will, in most cases, serve as most effective supporting courses. However, to meet more adequately the specific training needs of the individual student, a limited substitution for these supporting courses may be selected from those listed below.

PA41	Assessing Principles	In21-22	Life Insurance
E6	Business Conferences	IR22	Labor-Management Relations
Ec11-12	Business Finance	IM23-24	Mgmt. Problems & Policies
In27-28	Business Insurance	D7	Market Research
D34	Credit Problems	OM2	Office Organ. & Administration
L16	Government Controls	IR11-12	Personnel Administration
In17-18	Fidelity, Suretyship & Crime Ins.	R6	Retail Credit
In15-16	Inland Marine Insurance	OM1	Scientific Management

For degree requirements, see page 87

Management

Leading to the Degree of B.B.A. in Management

RETAILING OPTION

FIRST YEAR			SECOND SEMESTER		
Course No.	First Semester	Semester Hours	Course No.	Second Semester	Semester Hours
Ec1	Business Economics.....	2½	Ec2	Business Economics.....	2½
L5	Contracts.....	2½	L6	Contracts.....	2½
E1	Business English.....	2½	E2	Business English.....	2½
		7½			7½
SECOND YEAR					
D1	Marketing.....	2½	D2	Marketing.....	2½
L9	Law of Sales.....	2½	D3	Principles of Selling.....	2½
A13	Managerial Accounting.....	2½	A14	Managerial Accounting.....	2½
		7½			7½
THIRD YEAR					
R2	Retail Store Merchandising..	2½	R1	Retail Buying.....	2½
L7	Corp., Partnership, Agency..	2½	L8	Corp., Partnership, Agency..	2½
Ec5	Money & Banking.....	2½	Ec6	Money & Banking.....	2½
		7½			7½
FOURTH YEAR					
R6	Retail Credit.....	2½	R4	M'dise Display Techniques..	2½
L11	Negotiable Instruments.....	2½	L12	Creditors' Rights.....	2½
D10	Advertising Principles.....	2½	R3	Retail Store Advertising....	2½
		7½			7½
FIFTH YEAR					
Ec7	Business Statistics.....	2½	R5	Retail Store Management..	2½
D7	Market Research.....	2½	IR6	Practical Training Methods...	2½
Ec9	Bus. Planning & Research...	2½	Ec10	Bus. Planning & Research..	2½
		7½			7½
SIXTH YEAR					
IR11	Per. Admin. — Human Rela.	2½	IR12	Per. Admin. — Human Rela.	2½
IR22	Labor-Management Relations .	2½	D36	Management Small Business...	2½
D6	Sales Promotion.....	2½	IR5	Psychology for Business.....	2½
		7½			7½

For those planning careers in the field of retail store distribution, the above is an integrated program of suggested courses. The courses in heavy type are required in either the associate or bachelor's degree program. Those in regular type are suggested as most effective supporting courses. However, to meet more adequately the specific training needs of the individual student, a limited substitution for these supporting courses may be arranged from those listed below.

D11	Advertising Problems	Ec13	Investment Principles
D15	Advertising Copy	Ec14	Investments, Security Analysis
D17	Advertising Production	IR24	Labor Legislation — Standards & Cond. of Employment
E6	Business Conferences	OM2	Office Organ. & Administration
A15-16	Cost Accounting, Managerial	IR13	Personnel Mgmt. Practices
Ec21	Economic Geography	E5	Public Speaking
Ec22	Economics, International	D31	Purchasing
IR15	Employment Testing	D5	Sales Management
D23	Foreign Trade, Legal Aspects	OM1	Scientific Mgmt., Office Prac.
D21-22	Foreign Trade, Principles & Prac.	IR8	Techniques of Supervision
L-16	Government Controls	IR6	Training Methods

For degree requirements, see page 87

Management

Leading to the Degree of B.B.A. in Management

TRANSPORTATION AND TRAFFIC MANAGEMENT OPTION

FIRST YEAR			SECOND SEMESTER		
Course No.	First Semester	Semester Hours	Course No.	Second Semester	Semester Hours
E1	Business English.....	2½	E2	Business English.....	2½
Ec1	Business Economics.....	2½	Ec2	Business Economics.....	2½
T1	Principles of Transportation	2½	T3	Traffic Management.....	2½
		7½			7½
SECOND YEAR					
A13	Managerial Accounting.....	2½	A14	Managerial Accounting.....	2½
L13	Bus. Law I—Contracts, Agency	2½	L14	Bus. Law II—Sales, Neg. Inst.	2½
T5	ICC Practice & Procedure...	2½	T6	ICC Practice & Procedure..	2½
		7½			7½
THIRD YEAR					
Ec5	Money & Banking.....	2½	Ec6	Money & Banking.....	2½
L15	Law III—Partnerships, Corp.	2½	L16	Gov't Controls in Business ..	2½
T7	Rates and Tariffs.....	2½	T8	Rates and Tariffs.....	2½
		7½			7½
FOURTH YEAR					
In11	Casualty Insurance.....	2½	In12	Casualty Insurance.....	2½
T11	Motor Carrier Operations...	2½	IR8	Techniques of Supervision ...	2½
T15	Freight Claims for Loss & Damage.....	2½	IM21	Industrial Safety.....	2½
		7½			7½
FIFTH YEAR					
T4	Adv. Traffic Mgmt. Probs...	2½	IM17	Materials Handling.....	2½
In15	Inland Marine Insurance....	2½	In16	Inland Marine Insurance....	2½
D9	Ind. Packaging & Packing.....	2½	T17	Ads. Transportation Economics	2½
		7½			7½
SIXTH YEAR					
IM23	Management Prob. & Policies	2½	IM24	Management Prob. & Policies	2½
D1	Marketing.....	2½	D2	Marketing.....	2½
T13	Motor Carrier Accounting....	2½	T14	Motor Carrier Accounting....	2½
		7½			7½

For persons employed in or wishing to train for positions in the broad field of transportation, the above is an integrated program of suggested courses. The courses in heavy type are required in either the associate or bachelor's degree program. Those in regular type will, in most cases, serve as most effective supporting courses. However, to meet more adequately the specific training needs of the individual student, a limited substitution for these supporting courses may be selected from those listed below.

D10	Advertising Principles	IR24	Labor Legis., Stds. and Cond. Empl.
E2	Business Conferences	IR22	Labor-Mgmt. Relations
Ec11-12	Business Finance	IR25	Labor Agreement
Ec9-10	Business Planning and Research	D36	Mgmt. Small Business Enterprise
A15-16	Cost Accounting, Managerial	IM17	Materials Handling
D33	Credit Fundamentals	OM1	Sci. Mgmt., Office Practice
D34	Credit Problems	OM2	Office Organ. and Administration
Ec21	Economic Geography	IR11-12	Personnel Adm. — Human Rela.
Ec22	Economics, International	D3	Principles of Selling
D23	Foreign Trade, Legal Aspects	IR5	Psychology of Business & Industry
D21-22	Foreign Trade, Prin. & Prac.	E5	Public Speaking
Ec13	Investment Principles	RE1	Real Estate Fundamentals
IR23	Labor Legis., Union-Mgmt. Rela.	Ec7	Statistics
		IR6	Training Methods

For degree requirements, see page 87

Management

Leading to the Degree of B.B.A. in Public Administration

MUNICIPAL MANAGEMENT OPTION

FIRST YEAR			SECOND YEAR		
Course No.	First Semester	Semester Hours	Course No.	Second Semester	Semester Hours
PA1	American Government.....	2	PA2	American Government.....	2
E1	English I.....	2	E2	English I.....	2
Ec1	Business Economics.....	2½	Ec2	Business Economics.....	2½
L5	Contracts.....	2½	L6	Contracts.....	2½
		9			9
THIRD YEAR			FOURTH YEAR		
PA21	U. S. History.....	2	PA22	U. S. History.....	2
PA3	Comparative Government....	2	PA4	Comparative Government....	2
L7	Corp'ns, Partnership, Agency	2½	L8	Corp'ns, Partnership, Agency	2½
A13	Managerial Accounting.....	2½	A14	Managerial Accounting.....	2½
		9			9
FIFTH YEAR			SIXTH YEAR		
PA5	Constitutional History.....	4	PA6	History American Foreign Policy	4
PA23	Sociology.....	4	PA24	Social Probs. & Pathology ..	4
L11	Negotiable Instruments.....	2½	L12	Creditors' Rights.....	2½
		10½			10½
SEVENTH YEAR			EIGHTH YEAR		
Ec5	Money & Banking.....	2½	Ec6	Money & Banking.....	2½
PA11	Taxation.....	2½	RE2	Real Estate (Law).....	2½
PA25	Criminology.....	2	PA26	Criminology.....	2
PA10	Political Theory.....	2	PA9	International Politics.....	2
		9			9
NINTH YEAR			TENTH YEAR		
PA31	Prins. of Public Works.....	2½	PA38	Municipal Law.....	2½
PA39	Techniques of Mun. Mgmt....	2½	PA37	Municipal Finance.....	2½
PA35	Municipal Accounting I....	2½	PA40	State & Local Relations.....	2½
		7½			7½
ELEVENTH YEAR			TWELFTH YEAR		
PA43	Coun.-Mgr. — Pub. Relations	2½	PA44	Coun.-Mgr. — Pub. Relations	2½
PA36	Municipal Accounting II....	2½	PA41	Principles of Assessing.....	2½
PA33	Public Works II.....	2½	PA34	Public Works II.....	2½
		7½			7½

The above is an integrated program of suggested courses for providing specialized training for those training for employment with municipal governments.

The courses in heavy type are required in either the associate or bachelor's degree program. Those in regular type are suggested as most effective supporting courses. However, to meet more adequately the specific training needs of the individual student, a limited substitution for those supporting courses may be arranged from those listed below.

E6	Business Conferences	D1-2	Marketing
Ec11-12	Business Finance	D24	Marketing, Foreign
A15-16	Cost Accounting, Managerial	IR5	Psychology for Business & Industry
Ec13	Investment Principles	E5	Public Speaking
Ec14	Investment, Security Analysis	RE13	Real Estate Appraisal — Commer.
D23	Foreign Trade, Legal Aspects	RE11	Real Estate Appraisal — Residential
D21-22	Foreign Trade, Prin. & Prac.	OM1	Scientific Mgmt., Office Practices

For degree requirements, see page 87

Management

Leading to the Degree of B.B.A. in Public Administration

STATE AND FEDERAL OPTION

FIRST YEAR					
Course No.	First Semester	Semester Hours	Course No.	Second Semester	Semester Hours
PA1	American Government.....	2	PA2	American Government.....	2
E1	English I.....	2	E2	English I.....	2
Ec1	Business Economics.....	2½	Ec2	Business Economics.....	2½
L5	Contracts.....	2½	L6	Contracts.....	2½
		<u>9</u>			<u>9</u>
SECOND YEAR					
PA21	U. S. History.....	2	PA22	U. S. History.....	2
PA3	Comparative Government...	2	PA4	Comparative Government...	2
L7	Corp'ns, Partnership, Agency	2½	L8	Corp'ns, Partnership, Agency	2½
A13	Managerial Accounting.....	2½	A14	Managerial Accounting.....	2½
		<u>9</u>			<u>9</u>
THIRD YEAR					
PA5-6	Constitutional History.....	4	PA8	History Am. Foreign Policy..	4
PA23	Sociology.....	4	PA24	Social Probs. & Pathology....	4
L11	Negotiable Instruments.....	2½	L12	Creditors' Rights.....	2½
		<u>10½</u>			<u>10½</u>
FOURTH YEAR					
Ec5	Money & Banking.....	2½	Ec6	Money & Banking.....	2½
PA11	Taxation.....	2½	RE2	Real Estate (Law).....	2½
PA25	Criminology.....	2	PA26	Criminology.....	2
PA10	Political Theory.....	2	PA9	International Politics.....	2
		<u>9</u>			<u>9</u>
FIFTH YEAR					
L16	Government Controls.....	2½	Ec17	Public Finance.....	2½
Ec11	Business Finance.....	2½	Ec12	Business Finance.....	2½
Ec21	Economic Geography.....	2½	Ec22	International Economics...	2½
		<u>7½</u>			<u>7½</u>
SIXTH YEAR					
G204	Government and Business...	2½	PA40	State and Local Relations...	2½
OM2	Office Organization.....	2½		Area Study.....	4
D21	Foreign Trade.....	2½	D22	Foreign Trade.....	2½
		<u>7½</u>			<u>9</u>

The above is an integrated program of courses designed to assist those working for or planning careers in governmental service. The courses in heavy type are required in either the associate or bachelor's degree program. Those in regular type will, in most cases, serve as most effective supporting courses. However, to meet more adequately the specific training needs of the individual student, a limited substitution for these supporting courses may be selected from those listed below.

PA41 Assessing Principles
 E6 Business Conferences
 A15-16 Cost Accounting, Managerial
 PA37 Finance, Municipal
 Ec13 Investment Principles
 Ec14 Investment, Security Analysis
 D23 Foreign Trade, Legal Aspects
 D21-22 Foreign Trade, Prin. & Prac.
 PA39 Mgmt., Municipal, Techniques

D1-2 Marketing
 D24 Marketing, Foreign
 IR5 Psychology for Business & Industry
 E5 Public Speaking
 RE13 Real Estate App.-Commercial
 RE11 Real Estate App.-Residential
 OM1 Scientific Mgmt., Office Practices
 PA40 State and Local Relations

For degree requirements, see page 87

Engineering and Management Program

Leading to the Degree of B.B.A. in Engineering and Management

The Engineering and Management curriculum offers training which combines the fundamental courses in engineering and business for those now engaged in or who aspire to positions of managerial responsibility in commercial or industrial enterprises where a technical background is required.

The engineering requirements may be satisfied by graduation from an engineering college. The School of Business in conjunction with the Lincoln Technical Institute, an affiliated school of Northeastern University, offers a six-year program leading to the degree of Bachelor of Business Administration in Engineering and Management.

The management requirements of thirty (30) semester hours plus *Business Readings must be completed in the School of Business. Students having satisfactorily completed any of the required courses elsewhere will substitute other elective courses of equal credit.

Requirements for the Degree of Bachelor of Business Administration in Engineering and Management

	Semester Hours	
Engineering Courses (minimum requirements)	60	
Management Courses in School of Business (minimum requirements)		
Required Courses of all degree candidates:		
Business Economics	5	
Managerial Accounting (Industrial Accounting for students pursuing Production Option)	5	
Business Law I, II, III	<u>7½</u>	17½
Elective Courses chosen from one of the options outlined below		12½
*Business Readings		<u>30</u>
**Occupational Experience		5
		<u>30</u>
Total Semester Hours Required for Degree		125

OPTIONS

Technical Sales	Semester Hours	Production	Semester Hours
†Principles of Selling	2½	†Work Simplification I.....	2½
†Sales Management.....	2½	†Time Study I.....	2½
†Market Research.....	2½	†Job Analysis.....	2½
†Marketing.....	5	†Production Control.....	2½
Principles of Advertising	2½	Quality Control.....	2½
Economic Geography.....	2½	Materials Handling.....	2½
Foreign Trade.....	5	Plant Layout.....	2½
Business English.....	5	Manufacturing Processes.....	5
		Production Estimating.....	5
Administrative		Pre-Graduate Program	
Office Organization.....	2½	†Marketing.....	5
Credits.....	2½	†Labor-Management Relations.....	2½
Purchasing.....	2½	†Production Control.....	2½
†Personnel Administration.....	5	†Financial Organization.....	5
Government Controls.....	2½	†Statistics.....	2½
†Business English.....	5		
Management Small Business.....	2½		

*The Business Readings is not a classroom course, but is designed to broaden the student's acquaintance with selected readings in the field of business management. Courses of equal semester hours credit (five semester hours) may be substituted for Business Readings.

**Occupational Experience is awarded to a maximum of ten semester hours for each of the last three years. The award is based on the nature and quality of the student's employment during this period.

†Recommended electives.

Credit and Financial Management Institute

Business Management and the public are becoming increasingly aware of the responsibilities and professional obligations of the credit executive, whose work covers every important area of commercial and industrial activity. Credit dispositions affect the economic, social and moral welfare of peoples of all levels of our national life.

For the persons aspiring to a career in credit management, training on a professional level is a necessity. The program offered in the CREDIT AND FINANCIAL MANAGEMENT INSTITUTE and through the B.B.A. Degree curriculum is designed to qualify credit office personnel and others, whose interests and work are indirectly related to credit functions, for posts of greater responsibility and trust.

The Boston Chapter, National Institute of Credit, co-operates with the School of Business, Northeastern University, in sponsoring these courses of training. Satisfactory completion of the courses prepares the students for the examination to qualify for the Awards of Associate and Fellow of the National Institute of Credit. Examinations are set and given by the National Institute. Students are asked to consult with the dean for details of the examinations and awards.

The Certificate Program

The CREDIT AND FINANCIAL MANAGEMENT INSTITUTE of the School of Business awards Certificates upon completion in the School of Business of the required courses listed below plus additional elective courses to equal forty (40) semester hours of credit.

		Required Courses	
Course Numbers		Courses	Semester Hours of Credit
D 33		Credit Fundamentals	2½
D 34		Advanced Credits and Credit Problems	2½
A 13-14		Managerial Accounting	5
Ec 1-2		Business Economics	5
L 13		Law I (Contracts and Agency)	2½
L 12		Creditors' Rights	2½
E 5		Public Speaking	2½
D 3		Principles of Selling	2½
IR 8		Techniques of Supervision	2½
IR 5		Psychology	2½
L 11		Negotiable Instruments	2½
		Elective Courses	
D 1-2		Marketing	5
Ec 11-12		Business Finance	5
Ec 5-6		Money and Banking	5
OM 2		Office Organization and Administration	2½
D 31		Purchasing	2½
A 15-16		Managerial Cost Accounting	5
D 21-22		Foreign Trade, Principles and Practices	5
E 1-2		Business English	5

B.B.A. Degree in Credit Management

Credits earned in any of the above courses may be applied toward the requirements for the B.B.A. Degree in Management — Credit and Financial Management Option as shown on page 29.

Institute of Insurance

Designed to meet a demand for a practical approach to the basic principles and practices of current procedures and operations in the field of insurance, the Institute of Insurance offers an integrated program of courses, each closely interrelated with the appropriate policy forms, endorsements and manuals.

These courses should prove of especial value to office workers in insurance companies as a preparation for advancement or for those who may be employed as or who plan to train to become agents, brokers, fieldmen or underwriters.

The complete program including thirty (30) semester hours may be completed in two academic years. The courses will include those listed below as required courses, plus other elective courses to make a total of thirty (30) semester hours.

Required Courses

<i>Course Numbers</i>	<i>Courses</i>	<i>Semester Hours of Credit</i>
In 11-12	Casualty Insurance	5
In 13-14	Fire and Allied Lines	5
In 15-16	Inland Marine Insurance	2½
In 21-22	Life Insurance	5
In 17-18	Fidelity and Surety Insurance	5

Elective Courses

A 13-14	Managerial Accounting	5
Ec 1-2	Business Economics	5
L 13, 14, 15	Business Law I, II and III	7½
Ec 7-8	Business Statistics	5
Ec 5-6	Money and Banking	5
IM 21	Industrial Safety	2½
D 3	Principles of Selling	2½
E 5	Public Speaking	2½

B.B.A. Degree in Management

Credits earned in any of the above courses may be applied toward the ninety (90) semester hours required for the B.B.A. Degree in Business Management as shown on page 31. Students registering for this program should consult with the dean to arrange a program of courses which will most adequately satisfy their training needs.

Institute for Business and Professional Secretaries

Today, more than ever, with the increased tempo of defense production, business and industry are looking toward qualified women to assume positions of administrative responsibility. To meet these needs women with secretarial training may supplement this background with further knowledge and information through professional courses related to the operations of their respective departments or organizations. The combination of proficiency in the secretarial sciences with training through specialized courses related to their fields of employment considerably enhances their value and provides the avenue for advancement into positions of major importance with higher salaries. For those who have not had previous instruction in secretarial science, such courses will be included in their programs. Advanced standing credit, up to a maximum of fifteen (15) semester hours, may be awarded to those who have satisfactorily completed courses elsewhere and/or can achieve satisfactory performance in the secretarial sciences through proficiency examinations.

Students may register for individual courses, complete the requirements of forty-five (45) semester hours for the Certificate, or apply the credits earned toward the B.B.A. Degree in any of the curricula outlined on pages 25 to 42.

The program for each student will be recommended and planned on an individual conference basis. In each case, however, there will be a core of basic required courses which will be supplemented by elective courses selected to serve most adequately the student's specific needs. Certain suggested programs are outlined below.

Required Courses

Course No.		Semester Hours	Course No.		Semester Hours
S1	Shorthand I (Elementary).....	2½	E1	Business English—Bus. Corr...	2½
S2	Shorthand II (Intermediate)...	2½	E2	Business English—Rep. Writing	2½
S3	Typewriting I (Elementary)....	2½	OM2	Office Organ. & Admin.....	2½
S4	Typewriting II (Intermediate)..	2½	OM1	Scientific Man. in Off. Prac....	2½

Suggested Electives in Specialized Areas

Accounting			Finance		
A41-42	Basic Federal Taxes.....	5	A31	Analysis Fin. Statements.	2½
Ec1-2	Business Economics.....	5	Ec1-2	Business Economics.....	5
L13, 14, 15	Business Law I, II, III.....	7½	Ec11-12	Business Finance.....	5
A36	English for Accountants ..	2½	Ec9-10	Bus. Plan. & Research ...	5
L16	Government Controls.....	2½	Ec7-8	Business Statistics.....	5
A13-14	Managerial Accounting ..	5	Ec13	Investments, Principles...	2½
A5-6	Managerial Cost Acctg... 5		A13-14	Managerial Accounting... 5	
Ec5-6	Money and Banking..... 5		Ec5-6	Money and Banking..... 5	
Credit Management			Ec14	Security Analysis.....	2½
A31	Anal. Fin. Statements.... 2½		Engineering		
Ec1-2	Business Economics..... 5		IM3	Basic Tech. for Prod..... 2½	
E11-12	Business Finance..... 5		Ec7-8	Business Statistics..... 5	
L13, 14, 15	Business Law I, II, III.... 7½		A17-18	Industrial Accounting ... 5	
D34	Credit, Advanced Probs. . 2½		IM22	Industrial Experimenta... 2½	
D33	Credit Fundamentals..... 2½		IM7	Ind. Insp. & Mats. of Prod. 2½	
A13-14	Managerial Accounting .. 5		IM11	Principles of Production.. 2½	
Ec5-6	Money and Banking..... 5		IM12	Prod. Plng. & Con..... 2½	
IR5	Psychology for Business... 2½		IM15-16	Production Processes 5	
R6	Retail Credit..... 2½		IM13	Statistical Qual. Cont.... 2½	
Advertising			IM1	Work Simplification I.... 2½	
D15	Advertising Copy..... 2½		<i>Special Technical Courses</i>		
D17	Advertising Media..... 2½		Foreign Trade		
D10	Advertising Principles.... 2½		Ec1-2	Business Economics..... 5	
D16	Advertising Production... 2½		Ec7-8	Business Statistics..... 5	
E9-10	Industrial Journalism..... 5		Ec21	Economic Geography..... 2½	
D7	Market Research..... 2½		D21-22	Foreign Trade..... 5	
D1-2	Marketing..... 5		Ec22	Internat'l Economics 2½	
R4	Merch. Dis. for Sales Prom. 2½		D23	Leg. Aspects For. Trade .. 2½	
D18	Packaging for Sales..... 2½		L13, 14, 15	Bus. Law I, II, III..... 7½	
D3	Principles of Selling..... 2½		A13-14	Managerial Accounting... 5	
IR5	Psychology for Business .. 2½		D1-2	Marketing..... 5	
R3	Retail Store Advertising.. 2½		D7	Market Research..... 2½	
D6	Sales Promotion..... 2½		Ec5-6	Money and Banking..... 5	

Course No.		Semester Hours	Course No.		Semester Hours
Insurance			Production, Cont.		
In11-12	Casualty Insurance.....	5	D31	Purchasing.....	2½
In17-18	Fidelity, Surety, & Crime..	5	IM5	Time Study I.....	2½
In13-14	Fire & Allied Lines.....	5	IM1	Work Simplification I....	2½
In15-16	Inland Marine.....	5	Purchasing		
In5	Claims Procedure.....	2½	Ec7-8	Business Statistics.....	5
In21-22	Life Insurance.....	5	D21-22	Foreign Trade.....	5
In23	Group Insurance.....	2½	A17-18	Industrial Accounting....	5
In1-2	Fundamentals, Insurance..	5	IM7	Ind. Insp. & Mats. of Prod.	2½
L13, 14, 15	Bus. Law I, II, III.....	7½	L13, 14, 15	Bus. Law I, II, III.....	7½
A13-14	Managerial Accounting...	5	D3	Principles of Selling.....	2½
Ec7-8	Statistics.....	5	IM15-16	Production Processes....	5
IR11-12	Personnel Administration	5	IM13	Quality Control.....	2½
Law			Real Estate		
A41-42	Basic Federal Taxes.....	5	RE1	Real Est. Fundamentals..	2½
L5-6	Contracts.....	5	RE2	R.E. Law & Convey.....	2½
L7-8	Corp., Part., Agcy.....	5	RE7	Real Estate Finance.....	2½
L12	Creditors' Rights.....	2½	RE5	R.E. Invest. & Mgmt....	2½
L16	Government Controls....	2½	RE9	R.E. Selling & Adv.....	2½
L9	Law of Sales.....	2½	RE6	Operating R.E. Bus.....	2½
L20	Legal Research.....	2½	RE11	R.E. Appraisal—Resi....	2½
A13-14	Managerial Acctg.....	5	RE13	R.E.Ap.—Comm. & Ind..	2½
L11	Negotiable Instruments...	2½	Ec1-2	Business Economics.....	5
RE1	Real Est. Fundamentals...	2½	L13, 14, 15	Bus. Law I, II, III.....	7½
RE2	R.E. Law & Convey.....	2½	In11-12	Casualty Insurance.....	5
PA23	Sociology.....	4	In13-14	Fire Insurance.....	5
PA25	Criminology.....	4	A13-14	Managerial Accounting...	5
Office Management			Ec5-6	Money and Banking.....	5
Ec1-2	Business Economics.....	5	Retailing		
A33	Credit Fundamentals.....	2½	A13-14	Managerial Accounting...	5
IR15	Employment Testing.....	2½	D1-2	Marketing.....	5
OM3	Forms Design.....	2½	R4	Merch. Dis. for Sales Prom.	2½
IM6	Job Anal. & Evaluation...	2½	IR11-12	Personnel Admin.....	5
A13-14	Managerial Accounting...	5	IR6	Prac. Training Methods...	2½
OM4	Office Syst. & Proc.....	2½	D3	Principles of Selling.....	2½
IR11-12	Personnel Administration	5	IR7	Psychology for Business..	2½
IR6	Prac. Training Methods...	2½	R3	Retail Store Advertising..	2½
IR5	Psychology for Business...	2½	R1	Retail Buying.....	2½
D31	Purchasing.....	2½	R6	Retail Credit.....	2½
IR8	Tech. of Supervision.....	2½	R2	Retail Store Merchan....	2½
Personnel and Industrial Relations			R5	Retail Store Management.	2½
Ec7-8	Business Statistics.....	5	Sales		
In11	Cas. Ins.—Work. Comp..	2½	D15	Advertising Copy.....	2½
IR15	Employ. Testing.....	2½	D17	Advertising Media.....	2½
IR5	Industrial Psychology.....	2½	D10	Advertising Principles...	2½
IR25	Labor Agreements.....	2½	D16	Advertising Production...	2½
IM9	Job Anal. & Evaluation...	2½	L13, 14, 15	Business Law I, II, III....	7½
IR23	Labor Leg., Un.-Mgmt. Rel.	2½	Ec7-8	Business Statistics.....	5
IR24	Lab. Leg., Stds. & Cond.	2½	D33	Credit Fundamentals.....	2½
	Emp.....	2½	A13-14	Managerial Accounting...	5
IR22	Lab.-Mgmt. Relations...	2½	D1-2	Marketing.....	5
A13-14	Managerial Accounting...	5	D7	Market Research.....	2½
IR11-12	Persnl. Admin.—Hum. Rel.	5	D18	Packaging for Sales.....	2½
IR13	Persnl. Mgmt. Practices...	2½	D3	Principles of Selling.....	2½
IR6	Prac. Training Methods...	2½	D5	Sales Management.....	2½
IM5	Time Study I.....	2½	D6	Sales Promotion.....	2½
Production			Transportation & Traffic Management		
IM3	Basic Tech. for Prod.....	2½	T13-14	Motor Carrier Acctng....	5
L13, 14, 15	Bus. Law I, II, III.....	7½	T5-6	I.C.C. Prac. & Proc.....	5
A17-18	Industrial Accounting....	5	T11	Motor Carrier Opera.....	2½
IM7	Ind. Insp. & Mats. of Prod.	2½	T7-8	Rates and Tariffs.....	5
IM21	Industrial Safety.....	2½	T3	Traffic Management.....	2½
IM9	Job Analysis.....	2½	T1	Transportation Practices..	2½
IM11	Principles of Production..	2½	In11-12	Casualty Insurance.....	5
IM12	Prod. Plan. & Control...	2½	In15-16	Inland Marine Insurance..	5
IM15-16	Production Processes.....	5	L13, 14, 15	Business Law I, II, III....	7½
			A13-14	Managerial Accounting...	5

Institute of Municipal Management

The increasing complexity of the administrative functions of city and town governments presents problems requiring the application of business and technical knowledge of a practical and specialized nature. Today, as never before, each community is in partnership with the state and federal government and at either state or local level a better understanding of the needs of each is essential for anyone in an administrative position.

The INSTITUTE OF MUNICIPAL MANAGEMENT is designed to provide an integrated program of courses dealing with the *practical administration* of municipal governments.

The courses should have direct values for those currently employed in one of the various municipal operating departments; elected officers of the local governments; members of appropriations or finance committees; town meeting members; and others interested in effective administration of their community affairs. The program is especially designed for city or town managers, or for those planning professional careers in that field.

The Certificate Program

The Certificate requires the completion in the School of Business of thirty (30) semester hours of credit comprising the courses listed below. Students who have completed previously in another institution any of the required courses may substitute other courses related to the field upon approval of the dean.

Required Courses		
Course Numbers	Courses	Semester Hours of Credit
PA 31	Principles of Public Works	2½
PA 38	Municipal Law	2½
PA 39	Techniques of Municipal Administration	2½
PA 37	Municipal Finance	2½
PA 35	Municipal Accounting — I	2½
PA 40	State and Local Relations	2½
PA 33-34	Public Works — II	5
PA 43-44	Council-Manager Relations	5
PA 36	Municipal Accounting — II	2½
PA 41	Principles of Assessing	2½

The student may select an individual course, complete the requirements for the Certificate, or use the credits as satisfying part of the requirements for the B.B.A. Degree.

B.B.A. Degree in Public Administration

Students wishing to pursue their study toward the B.B.A. Degree in Public Administration should consult with the dean to arrange a program to apply the credits earned in the Institute Program. The full degree curriculum is shown on pages 41 and 42.

Institute of Retailing

Rapid changes have come about in the distribution of merchandise. This is especially true in the retail store phase of the field. During recent years, many factors such as rapidity of style changes, the increase in size of retail stores, and the keenness of competition have helped to make the management of a retail business more complex and difficult. Progressive stores have already done considerable in the nature of applying the scientific approach to some of these problems. In such a fast moving field, the store management is constantly in search of those who are qualified through adequate training and experience to assume responsibility and authority.

The courses included in the Institute of Retailing are designed to provide an integrated program of study for men and women who desire to train for positions of managerial responsibility in the field of retailing. Students may register for single courses or for the complete programs leading to

- I. The Certificate
- II. The Degree of Associate in Management
- III. The Degree of Bachelor of Business Administration in Management

I. The Certificate Program

The Certificate requires the completion of the thirty (30) semester hours of credit in the Required Courses listed as follows:

Required Courses		
Course Numbers	Courses	Semester Hours of Credit
Ec 1-2	Business Economics	5
D 1-2	Marketing Principles	5
D 3	Principles of Selling	2½
R 2	Retail Store Merchandising	2½
D 10	Advertising Principles	2½
R 3	Retail Store Advertising	2½
R 1	Retail Buying	2½
R 6	Retail Credit	2½
R 5	Retail Store Management	2½
R 4	Display Techniques	2½
		30

II. The Degree of Associate in Management

The Associate Degree may be earned by completing a total of sixty (60) semester hours. In addition to the above thirty semester hours of required courses, the student must complete thirty semester hours of additional credit in courses chosen in consultation with the dean.

III. B.B.A. Degree in Management

Students wishing to apply credits in either of the above programs toward the B.B.A. Degree should consult with the dean who will arrange a program of courses to meet the degree requirements, allowing specialization in the field of retailing.

SPECIAL COURSES

Each year special courses will be offered in specific aspects of retailing. Many of these courses will be accepted for degree credit as elective courses.

Institute of Transportation and Traffic Management

Transportation as a phase of the distribution of raw materials and processed merchandise is assuming a degree of major importance in our American economy. The flexibility of the trucking industry is changing many of our concepts of inventories and methods of operation. This, plus the cost factor, requires effective management of the handling and shipment of goods.

Two standards of professional achievement exist today in the field of Transportation and Traffic Management. One is admission to practice before the bar of the Interstate Commerce Commission; the other is admission to the American Society of Traffic and Transportation, Inc. Examinations for the former are given twice yearly by the Interstate Commerce Commission. Successful completion of the examination qualifies one to present cases and represent clients before the Commission. Examinations for the latter are announced periodically by the association. Successful completion of the examination carries with it a certificate of accomplishment that is very highly regarded in the fields of Transportation and Traffic Management.

The Institute program outlined below is designed to accomplish two objectives: (1) Provide an intensive training in the fields of Transportation and Traffic Management, as well as a supplementary background in the broader aspects of business administration; (2) prepare individuals specifically for the two examinations discussed above. The courses marked with an asterisk (*) are those most necessary for this preparation.

The Certificate Program

To qualify for the Certificate, a student must complete the following required courses, plus a sufficient number of elective courses to make a total of thirty (30) semester hours.

Required Courses

Course Numbers	Courses	Semester Hours of Credit
T 1	*Principles of Transportation	2½
T 3	*Traffic Management	2½
T 4	*Advanced Traffic Management Problems	2½
T 5-6	*I.C.C. Practice and Procedure	5
T 7-8	*Rates and Tariffs	5
T 15	*Freight Claims for Loss and Damage	2½

Elective Courses

T 11	Motor Carrier Operations	2½
T 13-14	Motor Carrier Accounting	5
T 17	*Advanced Transportation Economics	2½
Ec 1-2	*Business Economics	5
L 13, 14, 15	Business Law I, II and III	7½
In 11-12	Casualty Insurance	5
L 16	*Government Controls in Business	2½
D 9	Industrial Packaging and Packing	2½
In 15-16	Inland Marine Insurance	5

B.B.A. Degree in Management

Credits earned in any of the above courses may be applied toward the ninety (90) semester hours required for the B.B.A. Degree in Business Management as shown on page 40. Students registering for this program should consult with the dean to arrange a program of courses which will most adequately satisfy their training needs.

Labor Relations Institute

The management of labor relations presents the most vital and challenging aspect of our industrial development of the immediate future. Continuance of our American way of industrial democracy demands a harmonious understanding of the underlying principles of labor and industrial management for the peaceful adjustment of their common problems.

The Labor Relations Institute of Northeastern University was organized to serve this need. It is dedicated to the service of both labor and management. It directly concerns the work of industrial and labor executives, plant managers, personnel directors, union shop councillors and stewards.

Required Courses

LABOR-MANAGEMENT RELATIONS — The history and development of Collective Bargaining

LABOR LEGISLATION — Union-Management Relations

THE LABOR AGREEMENT — Negotiation and Administration

LABOR RELATIONS SEMINAR

Elective Courses

ACCOUNTING AIDS TO MANAGEMENT

CONFERENCE LEADERSHIP

GRIEVANCE ANALYSIS AND PROCEDURE

INDUSTRIAL PSYCHOLOGY

INDUSTRIAL SAFETY

JOB EVALUATION, MERIT RATING

LABOR LEGISLATION — Conditions of Employment

PRACTICAL TRAINING METHODS

WORK SIMPLIFICATION I

WORK SIMPLIFICATION II

PERSONNEL ADMINISTRATION

EMPLOYMENT TESTING

PUBLIC SPEAKING

TIME STUDY I

TIME STUDY II

WAGE ADMINISTRATION

Students may register for the complete program or may take any one or more of the courses which serve their particular needs. They may complete the entire program by attending two evenings per week for two years. Each individual course is one semester or seventeen weeks in length and carries two and one-half semester hours of credit for students qualified for the degree programs of Northeastern University Evening School of Business.

Advisory Committee

The Advisory Committee to the Labor Relations Institute is composed of representatives of labor, management, and public agencies. They were chosen on the basis of their leadership in the field, their broad-minded approach to labor-management problems, and their interest in education as a means of developing better relationships.

DR. A. HOWARD MYERS, *Chairman*

BERNARD M. ALPERT, Regional Director
National Labor Relations Board

J. WILLIAM BELANGER
Textile Workers of America

OSCAR B. BENSON
Industrial Relations Department
Boston Edison Company

JACOB BLUME
Amalgamated Clothing Workers of
America

ALBERT COULTHARD, Commissioner
Massachusetts Labor Relations Commission

JAMES J. HEALY, Labor Arbitrator
Former Assistant N. E. Regional Director
War Labor Board

KENNETH KELLEY, Secretary-Treasurer
Massachusetts State Federation of Labor

ANDREW C. KUHN
Director of Industrial Relations
Stop and Shop, Inc.

E. ROBERT LIVERNASH
Industrial Relations Manager
J. F. McElwain Company

WENDELL D. MACDONALD, Regional Director
Bureau of Labor Statistics, U. S. Department of Labor

JAMES NELSON, Assistant Regional Director
U. S. Department of Labor

GEORGE E. ROEWER, Attorney

JOSEPH A. SMITH, Personnel Director
American Woolen Company

Office Management Institute

The profession of office management has developed rapidly in scope and status in response to the technical and diversified nature of the problems arising and the current trends toward the scientific approach to the solutions of these problems. Heretofore, the efforts toward simplified work procedures have been related primarily to the plant ends of production. Its extension to office procedures is vital to the necessary reduction of the ever-mounting overhead created by increased costs.

The Office Management Institute is designed to serve those already employed in the field by providing instruction necessary for simplification and standardization of their operational tasks. The courses should have an appeal for systems analysts, accountants, office managers, sales managers, engineers, comptrollers, etc. It also provides a formal and planned program of training for those intending to make their careers in this profession.

The student may select an individual course, complete the requirements of the Certificate Program, or use the credits earned toward the B.B.A. Degree.

The Certificate Program

The Certificate requires the completion of thirty (30) semester hours of credit from courses selected from those listed below:

Required Courses

SCIENTIFIC MGT. IN OFFICE PRACTICE	2½	OFFICE ORGANIZATION AND ADMINISTRATION	2½
FORMS DESIGN AND CONTROL	2½	OFFICE SYSTEMS AND PROCEDURES	2½
MANAGERIAL ACCOUNTING (or equivalent)	5	TECHNIQUES OF SUPERVISION	2½

Elective or Related Courses

BUSINESS ENGLISH	LABOR-MANAGEMENT RELATIONS
BUSINESS CONFERENCES	PERSONNEL ADMINISTRATION
COST ACCOUNTING FOR MANAGEMENT	PRACTICAL TRAINING METHODS
EMPLOYMENT TESTING	STATISTICS, BUSINESS & INDUSTRIAL WAGE ADMINISTRATION

B.B.A. Degree in Management

Credits earned in any of the above courses may be applied toward the ninety (90) semester hours required for the B.B.A. Degree in Business Management as shown on page 35. Students registering for this program should consult with the dean to arrange a program of courses which will most adequately satisfy their training needs.

Production Management Institute

The Production Management Institute presents an integrated program of courses for those specifically related to or interested in the plant ends of manufacturing. With each course designed to treat the subject matter in detail and thereby stand alone as a unit, the program achieves integration by the use of projects which carry through the several courses in sequence, developing a complete picture of the methods and procedure encountered in the over-all practical problems of production. This integration makes possible the thorough study of a highly technical field with limitless detail which otherwise could be approached only in a superficial manner.

This program should have direct values to those currently employed in one of the several operating manufacturing departments as well as those who wish to plan for careers in this area of management.

The student may select an individual course, complete the requirements of the Certificate Program, or use the credits earned toward the B.B.A. Degree in the Production Management curriculum outlined on page 37.

The Certificate Program

The Certificate requires the completion in the School of Business of thirty (30) semester hours of credit from courses listed below. Students who can establish proficiency in any of the required courses through practical experience, or who have completed any of them previously in another institution, may substitute other related courses upon approval of the dean.

Required Courses

<i>Course Numbers</i>	<i>Courses</i>	<i>Semester Hours of Credit</i>
IM3	Basic Technology for Production	2½
IM25-26	Estimating for Production	5
A17-18	Industrial Accounting	5
IM12	Production Planning and Control	2½
IM15-16	Production Processes	5
IM1	Work Simplification I	2½

Elective Courses

Ec7	Business & Industrial Statistics	2½
IM7	Industrial Inspection & Materials of Production	2½
IM21	Industrial Safety	2½
IM9	Job Analysis and Evaluation	2½
IR25	Labor Agreement	2½
IR22	Labor-Management Relations	2½
IM17	Materials Handling	2½
IR11-12	Personnel Administration — Human Relations	5
IM19-20	Plant Layout	5
IM27	Plant Maintenance	2½
IR6	Practical Training Methods	2½
IM13	Quality Control in Industry	2½
IM10	Synthetic Time Standards (M.T.M.)	2½
IR8	Techniques of Supervision	2½
IR5	Time Study I	2½
IM2	Work Simplification II	2½

B.B.A. Degree in Production Management

Credits earned in any of the above courses may be applied toward the ninety (90) semester hours required for the B.B.A. Degree in Production Management. Students registering for this program should consult with the dean to arrange for a program of courses which will most adequately satisfy their training needs.

Real Estate Institute

The social and economic importance of real estate has been impressed upon us since World War II. Conditions in the field have changed rapidly since that time to the extent that real estate is no longer a local phenomenon but rather a national problem. It becomes increasingly important, therefore, that persons be trained in the economics as well as the legal and financial problems for either personal use or for operational purposes as brokers, financiers, managers or investors.

The courses comprising the INSTITUTE OF REAL ESTATE are designed as practical tool courses for those training for or directly associated with concerns actively engaged in real estate ownership, conveyancing, and management as lawyers, real estate agents and brokers, property managers, conveyancers, builders, or employees of banks, insurance companies, and other financial institutions with major investments in real estate.

Students may register in single courses or for complete programs leading to

- I. The Certificate
- II. The Degree of Associate in Management
- III. The Degree of Bachelor of Business Administration.

The Certificate Program

To qualify for the Certificate, a student must complete in the School of Business a minimum of thirty (30) semester hours of credit. The courses will include those listed below as required, plus additional elective courses to equal the required total.

Required Courses		
Course Numbers	Courses	Semester Hours of Credit
RE 1	Real Estate Fundamentals	2½
RE 2	Real Estate Law and Conveyancing	2½
RE 5	Real Estate Investment and Management	2½
RE 7	Real Estate Finance	2½
RE 6	Operating a Real Estate Business	2½
RE 9	Real Estate Sales & Advertising	2½
RE 13	Real Estate Appraisal, Commercial & Industrial Properties	2½
RE 11	Real Estate Appraisal, Residential Properties	2½
A 13-14	Managerial Accounting	5
Elective Courses		
L 13, 14, 15	Business Law I, II, III	7½
Ec 1-2	Business Economics	5
Ec 7	Business Statistics	2½
D 1-2	Marketing	5
D 3	Principles of Selling	2½
D 10	Principles of Advertising	2½
E 5	Public Speaking	2½

B.B.A. Degree in Management

Credits earned in any of the above courses may be applied toward the semester hour requirements for the B.B.A. Degree in Management as shown on page 38.

Quality Control Institute

The application of statistical methods to the control of quality — a comparatively new management tool — has produced significant results in:

- Improved quality of manufactured product
- Increased productivity of labor and machines
- Reduction in scrap, rework, tool and machine down-time costs
- Decrease in rejects
- Increased effectiveness of supervision
- Improved quality of purchased materials
- Providing of scientific analysis of product specification

Quality Control has effective application to both large and small organizations. It warns when trouble is imminent and tells where and when to look for the source of the trouble. It indicates when a process should be changed for increased economy. By appropriate sampling techniques it provides a constant control of materials used, the production processes, and the inspection of the final product, resulting in reduction of costs and the production of a higher percentage of acceptable units.

The courses are designed to serve persons specializing in Quality Control or those wishing to include it in the Degree Program in Production Management.

The Certificate Program

The Certificate requires the completion in the School of Business of thirty (30) semester hours of credit, at least twenty (20) of which are in the required courses. The remainder may be selected from the elective courses listed or other courses related to the field after consultation with the Dean.

Required Courses

<i>Courses</i>	<i>Semester Hours</i>
Basic Technology for Production	2½
Industrial Inspection and Materials of Production	2½
Business and Industrial Statistics I	2½
Business and Industrial Statistics II	2½
Quality Control in Industry	2½
Advanced Quality Control	2½
Industrial Experimentation	2½
Managerial Control — Quality	2½
Quality Control Seminar	2½

Elective Courses

Production Planning and Control	2½
Process Engineering	5
Work Simplification I, II	5
Techniques of Supervision	2½
Psychology for Business and Industry	2½
Business Conferences	2½
Management Problems and Policies	5

B.B.A. Degree in Production Management

Credits earned in any of the above courses may be applied toward the semester hour requirements for the B.B.A. Degree in Production Management as shown on page 37. Students registering for this degree program should consult with the dean to arrange a program of courses which will most adequately serve their individual needs.

World Trade Institute

The United States emerged from the Second World War as a dominant world power with a tremendously expanded industrial and agricultural capacity and an enlightened awareness of its responsibilities in the community of great powers. The economic and political welfare of our country is inextricably associated with our willingness and ability to meet the challenge of raising the stricken countries to positions of self-dependency through providing the necessary goods, services and "know-how," receiving in increasing amounts the products of their industry.

Thus we can look forward to an increasingly reactivated flow of goods in international trade requiring persons adequately trained in the special problems of marketing on a global scale.

The educational objective of the WORLD TRADE INSTITUTE is to offer an intensive, practical program of integrated courses to train men and women employed by concerns engaged in foreign trade as well as to prepare those seeking future careers in this expanding field.

The Certificate Program

The Certificate requires the completion in the School of Business of thirty (30) semester hours of credit selected from the courses listed below. Students who have completed previously in another institution any of the required courses may substitute other courses related to the field upon approval of the dean.

<i>Course Numbers</i>	<i>Courses</i>	<i>Semester Hours of Credit</i>
Ec 1-2	Business Economics	5
Ec 21	Economic Geography	2½
D 21-22	Foreign Trade Principles and Practices	5
D 24	Foreign Marketing	2½
D 25	Global Transportation	2½
Ec 22	International Economics	2½
D 23	Legal Aspects of Foreign Trade	2½
D 1-2	Marketing	5
In 15-16	Marine Insurance	5
D 26	Seminar in World Trade	2½

The student may select an individual course, complete the requirements for the Certificate, or use the credits as satisfying part of the requirements for the B.B.A. Degree.

B.B.A. Degree in Management

Credits earned in any of the above courses may be applied toward the semester hour requirements for the B.B.A. Degree in Management, Marketing Option, as shown on page 34. Students registering for this program should consult with the dean to arrange a program of courses which will most adequately satisfy their training needs.

School of Business

Description of Courses

THE UNIVERSITY reserves the right to withdraw, modify, or add to the courses offered, or to change the order of courses in curricula as may seem advisable.

The University further reserves the right to withdraw in any year any elective or special course for which less than twelve enrollments have been received. Regular students so affected by such withdrawal will be permitted to choose some other course. In the case of special students, a full refund of all tuition and other fees will be made.

The University also reserves the right to change the requirements for graduation, tuition and fees charged, and other regulations. However, no change in tuition and fees at any time shall become effective until the school year following that in which it is announced.

All full-year courses are numbered with a double consecutive number and all half-year courses with a single number. The letter or letters immediately preceding the numbers indicate the classification of the course. The number of class sessions indicated for each course includes the final examination session. All full-year courses will have mid-year examinations and course credit will be granted on a semester basis.

ACCOUNTING (A)

Applicants for admission to the School who have had experience in accounting or bookkeeping or who have pursued systematic courses in institutions of less than college grade may take an examination for placement purposes in Introductory Accounting. Those who pass this examination will be admitted to Intermediate Accounting and may substitute an elective course in lieu of Introductory Accounting.

A 1-2 INTRODUCTORY ACCOUNTING

This course provides basic instruction for those who plan to specialize in accounting or for those who wish to enroll later for more advanced courses. Emphasis is placed upon proprietorship accounts, including books of entry, statements, business practices, adjustments, and an introduction to partnership accounts. Drill and practice work are required for proficient handling of simple accounting transactions.

(No previous knowledge of bookkeeping or accounting necessary)

5 semester hours credit

A 3-4 INTERMEDIATE ACCOUNTING

A continuation of Introductory Accounting, treating with problems of the partnership and corporate forms of business entities. Accounts for a manufacturing business are introduced. In addition to the drill and practice work on accounting technique, a mastery of many accounting principles is required.

(Prerequisite, A 1-2)

5 semester hours credit

A 5-6 ACCOUNTING PROBLEMS

This course is designed to develop the student's reasoning power and his ability to apply the proper accounting principles in solving a specific problem. Emphasis is placed on principles and their application rather than on individual situations. Subjects covered are the preparation of financial statements, accounting for and valuation of cash items, receivables, inventories, liabilities, and net worth accounts. Capital stock, treasury stock, and surplus are discussed in detail.

(Prerequisite, A 3-4)

5 semester hours credit

A 7-8 ADVANCED ACCOUNTING PROBLEMS

This course is designed primarily to meet the requirements of students intending to enter the accounting profession. Application of accounting principles to special situations such as insolvent companies, estates and trusts, installment sales and consignments. Considerable time is spent on preparation of consolidated statements.

(Prerequisite, A 5-6)

5 semester hours credit

A 9-10 C.P.A. PROBLEMS

A complete review of the theories encountered in A 5, 6, 7, 8, 21, 22, 41, 42. This course is primarily for students intending to take the state C.P.A. examinations. Considerable practice is required, using largely problems from previous C.P.A. examinations. Emphasis is placed on the technique of adequate problem solutions.

(Prerequisite, A 7-8; 21-22; 25; 41-42; L 13, 14, 15)

10 semester hours credit

A 11 FUND ACCOUNTING

The concept of "fund" accounting finds its application in the accounting procedures of governmental units, charities, and educational institutions. This course deals with segregation of assets and liabilities into funds and self-balancing groups required by the organization of non-profit enterprises.

Integrated into the principles of funds is the treatment of accounting controls necessitated by governmental approaches or budgets.

(Prerequisite, A 6)

2½ semester hours credit

A 13-14 MANAGERIAL ACCOUNTING

A study of the broad background of accounting and business transactions to enable the student to analyze and interpret intelligently financial statements and other accounting reports. The course demonstrates the use of accounting in management and financial control. Topics covered are the development of accounting fundamentals, preparation of financial statements, corporation and manufacturing accounts, evaluation of balance sheet items, analysis and interpretation of financial statements and other trends, and the use of accounting as an aid to management.

(No previous knowledge of bookkeeping or accounting necessary)

5 semester hours credit

A 15-16 MANAGERIAL COST ACCOUNTING

Increasing emphasis on the cost factors of production and distribution necessitates a fundamental knowledge of cost procedures on the part of every student training for management responsibilities. This course is designed to provide a practical and thorough coverage of basic cost procedures related to materials, labor and manufacturing expense control, and their integration with general manufacturing accounts. Job order, process and standard cost systems are studied.

(Prerequisite, A 13-14)

5 semester hours credit

A 17-18 INDUSTRIAL ACCOUNTING

The intent of this course is to present the basic mechanics of accounting principles as a background for more specific consideration of cost accounting in its relationship to production. It deals with accounting fundamentals; preparation of financial statements; corporation and manufacturing accounts; evaluation of balance sheet items; manufacturing costs; the job lot cost plan; cost accounting for material, labor, departmental factory burden rates; process cost accounting; standard cost accounting; operational cost accounting; uses of accounting in control of business expenses, measurement of operations, and the formulation of business policy.

(No previous knowledge of bookkeeping or accounting necessary)

5 semester hours credit

A 21-22 COST ACCOUNTING

Acquaints the student with the relationship of cost accounting to management and administration control and shows how adequate cost systems may further the intelligent management of business enterprises. Job order, process, and standard cost systems and their integration into the general accounting system of the business are studied. Numerous problems and sets serve as the basis for a study of the various accounts, records, systems, and methods commonly used in modern cost accounting.

(Prerequisite, A 5-6)

5 semester hours credit

A 23-24 ADVANCED COST ACCOUNTING

Intended only for the student who desires to enter the field of cost accounting, this course presents advanced situations and the more intricate problems encountered in cost accounting for specialized businesses. Included in the course is a thorough study of distribution and administrative costs. Each topic is approached from the point of view of what management may expect and the use to which cost information may be put.

(Prerequisite, A 21-22)

5 semester hours credit

A 25 AUDITING

This course covers both theory and practice of auditing with emphasis on statement presentation and internal control. Procedures employed in balance sheet audits in verifying cash, receivables, inventories, investments, plant assets, intangibles, deferred charges, liabilities, capital, income, and expense accounts are covered. Attention is given to pronouncements, research bulletins and statements of auditing procedure issued by the American Institute of Accountants. Accounting theory is discussed where necessary to clarify auditing procedures.

(Prerequisite, A 5-6)

2½ semester hours credit

A 26 AUDIT PRACTICE

Audit Practice is offered primarily for students who intend to enter public accounting. A practice audit simulating the work of public accountants is conducted and an audit report prepared. Preparation of adequate working papers is emphasized.

(Prerequisite, A 25)

2½ semester hours credit

A 27 INTERNAL AUDITING

This course undertakes a study of the function of the internal auditor in ascertaining the degree of reliability of accounting and statistical data developed within the organization, the extent to which company assets are properly accounted for and safeguarded from loss, and the extent of compliance with established policies, plans, and procedures. The internal auditor's review and appraisal of the accounting, financial, and other policies and plans of the organization as a basis for protective and constructive service to management are covered. The development of working papers and writing of the report are studied and problems of human relations with personnel in other departments discussed.

(Prerequisite, A 25)

2½ semester hours credit

A 31 ANALYSIS OF FINANCIAL STATEMENTS

This course embodies a study of the techniques used by management, creditors, investors, and regulatory authorities in the analysis and interpretation of financial statements for the purpose of establishing credit ratings, determining the investment value of a business, testing the efficiency of operations, and determining whether financial and operating policies, methods, and practices should be continued or changed. The student's ability to analyze, question, determine significant omissions, to criticize constructively, and to distinguish between inferences and facts is developed by extensive use of published corporate reports. The companies selected for study are in industries important to the New England economy such as transportation, power, fuels, lumber, merchandising, textiles, electronics, machinery, paper, shoes, etc.

(Prerequisite, A 5-6)

2½ semester hours credit

A 32 CONSTRUCTIVE ACCOUNTING

To acquaint students with the principles underlying the construction of accounting systems and the procedure of system installation. The course is developed by means of problem projects beginning with an analysis of the accounting needs of a small business. By gradual steps increasingly larger businesses are studied and accounting systems developed to meet their needs. Special attention is given accounting records in relation to the expansion of the accounting system.

(Prerequisite, A 5-6)

2½ semester hours credit

A 33 BUDGET PROCEDURE

The procedures and techniques used in preparing a comprehensive budget are discussed and illustrated by the compilation of a master budget plan from sales, production, manufacturing, selling and administrative expenses through the balance sheet and profit and loss statements. A comparison of the budget and actual financial statements is prepared with explanatory notes.

(Prerequisite, A 5-6)

2½ semester hours credit

A 34 CONTROLLERSHIP

The three basic objectives of the controllership function are defined as control and protection of corporate property, compliance with legal reporting and record-keeping requirements, and assistance to management in controlling operations and formulating policies. This course covers the functions and organization of the controller's department, basic techniques employed by the controller, the interpretation of historical results and their co-ordination into the broad policy-making program of the business. The technical phases of the controller's work are covered as preparation for the study of his role as reporter, adviser, and counsellor to business management at all executive levels undertaken in the latter part of the course.

(Prerequisite, A 7-8)

2½ semester hours credit

A 35 MATHEMATICS OF ACCOUNTING

Mathematical computations required in business practice and in C.P.A. examinations are covered. Considerable practice material is assigned to develop facility and accuracy in mathematics.

Arithmetical computations: Percentages, averages, interest, discounts, partial payments, installment sales, valuation of good will, logarithms, depreciation, gross profit.

Algebraic computations: Tax and bonus problems, determination of net worth of inter-owned companies.

Actuarial science: Compound interest, compound amounts and present values; ordinary annuities and annuities due; sinking fund computations; debt amortizations; effective interest on bonds.

(Prerequisite, A 7-8)

2½ semester hours credit

A 36 ENGLISH FOR THE ACCOUNTANT

This course is designed to promote facility of expression in accounting work. Considerable practice is required in writing answers to questions on accounting theory and in preparation of reports. Emphasis is placed on use of good grammar, complete and concise expression, and in writing so that statements cannot be misunderstood.

(Prerequisite, A 3-4)

2½ semester hours credit

A 41-42 BASIC FEDERAL TAXES

This course provides a thorough basic coverage in the principles of federal income taxes. A detailed study is made of the Federal income tax law and its application to the incomes of individuals, partnerships, corporations, and fiduciaries. Many practical tax problems are presented for study and solution.

(Prerequisite, A 3-4)

5 semester hours credit

A 43-44 ADVANCED FEDERAL TAXES

This course is designed to prepare the student to handle the complicated tax problems arising in everyday business. To give the student experience in methods used in actual tax practice, he is required to study the provisions of the Internal Revenue Code, analyze numerous special tax problems, and solve them by applying relevant provisions of tax law. Solutions must be supported by citations.

(Prerequisite, A 41-42)

5 semester hours credit

A 45-46 TAX PLANNING

An advanced course in corporate tax problems, covering tax advantages and disadvantages of the corporate form of organization; dangers of inadequate capitalization; compensation problems, including deferred compensation, bonus plans, and pension plans; problems of close corporations; the section 102 penalty; corporate reorganization and liquidation; expense accounts of executives; research and development expenses; and cancellation of indebtedness. A detailed analysis of real estate tax problems, including tax aspects of mortgages, lease agreements containing options to buy, sales and lease backs; also purchase and sale of a business, including covenants not to compete; survivorship purchase agreements; pointers on bad debts, worthlessness, and other business losses. Methods of effecting tax economies in connection with these problems will be stressed.

(Prerequisite, A 43-44 or its equivalent)

5 semester hours credit

A 50 PUNCHED CARD ACCOUNTING

This is a special course offered in co-operation with the National Machine Accountants Association of Massachusetts. Increasingly, numerous installations of punched card accounting systems make this course of immediate and practical value to public accountants, treasurers, controllers, accountants, and supervisors of punched card installations. It provides a working knowledge of the economic possibilities of punched card accounting equipment, embracing a thorough presentation of card and forms design in the process of applying I.B.M. and Remington Rand equipment to salary payroll; payroll and labor distribution; inventory and material accounting; billing; sales accounting; accounts receivable; plant and equipment accounting, etc.

(Prerequisite, satisfactory accounting background)

2½ semester hours credit

ECONOMICS (Ec)

Economics is the basic foundation upon which the general principles of business as a science are founded. A mastery of the underlying economic laws enables the student to see clearly the forces which business men must use in arriving at solutions to their problems. An appreciation and understanding of economics is a necessary factor in the equipment of a progressive business man.

Ec 1-2 BUSINESS ECONOMICS

The study of our economic society, its institutions and their practices as essential prerequisites to the successful conduct of business affairs and to the development of intelligent citizenship. The introductory course aims to provide the significant economic principles and facts about industry, labor, money, banking, the distribution of income to the factors of production, business fluctuations, and forms of social organization. Consideration is given to current economic problems, in relation to the basic principles and laws, and to their implications for individuals, business, and government, as well as society at large.

5 semester hours credit

Ec 5-6 MONEY AND BANKING

The primary purpose of this course is to provide a comprehensive knowledge and understanding of the relationship of money, monetary and fiscal policy, and of financial institutions to our economic society and to business management. Among the major topics are money and monetary theory, central banking systems, commercial banking, credit instruments, bank loans and investments, credit policy and its relation to fiscal affairs, sources of funds other than commercial banks, international finance and foreign exchange, and current banking and monetary problems.

(Prerequisite, Ec 1-2)

5 semester hours credit

Ec 7 BUSINESS AND INDUSTRIAL STATISTICS

The objective of this course is to introduce students with no previous training in statistics to its practical use in analyzing problems encountered in business and industry. It presents the fundamental concepts underlying analytical method and serves as a prerequisite for advanced courses in statistics. Presented from the point of view of the business man, it is concerned with the nature and calculation of averages; measures of dispersion; measures of skewness, kurtosis, and normal curve analysis; an introduction to basic probability and its relation to sampling. Tabular and graphic presentation of data will be considered. A part of each session will be devoted to laboratory practice in the solution of problems.

2½ semester hours credit

Ec 8 BUSINESS AND INDUSTRIAL STATISTICS

This course is a continuation of Ec 7 and introduces the student to the field of time series analysis. Among the principal topics considered are the measurement of secular trends by free-hand and mathematical methods; the measurement of seasonal fluctuations; cyclical fluctuations; the general nature and calculation of index numbers; and an introduction to linear correlation. A part of each session is devoted to laboratory solution of problems.

(Prerequisite, Ec 7)

2½ semester hours credit

Ec 9-10 BUSINESS PLANNING AND RESEARCH

To assist business men to make more definite and more accurate business decisions through a broader understanding of the significant information and statistics regarding our economic system and its operations is the major objective of this course. Sources of information, strengths and weaknesses of principal measures of business activity, and the use of several widely accepted indexes in general business forecasting are a major part of the study, as well as sales forecasting, business cycle analysis, and the effects of the broadening relation of government policies upon the individual business firm.

5 semester hours credit

Ec 11-12 BUSINESS FINANCE

This course studies the financial aspects of the management of the modern corporation as the major form of business organization. Types of stocks and bonds, promotion of enterprises, distribution of securities, financial policies relating to fixed and working capital, dividends, surplus, and reserves all receive attention. Recapitalization, reorganization, mergers, and liquidation are considered, as well as the relationship of corporation finance to taxation and public policy.

(Prerequisite, Ec 5-6)

5 semester hours credit

Ec 13 INVESTMENT PRINCIPLES

Consideration is given to the investment characteristics of various kinds of securities such as bonds, preferred stock, common stock, and government obligations. Industry characteristics are discussed as they affect different kinds of securities. Particular attention is given to establishment of a definite pattern of approach to analysis. Supplementary areas covered include mathematics of investment and the mechanics of investment.

(Prerequisite, Ec 11-12)

2½ semester hours credit

Ec 14 SECURITY ANALYSIS

Classification of securities; fundamental elements in security analysis, quantitative and qualitative factors; sources of information; fixed value investments; securities with speculative features; common stock investments; the earning factor in common stock evaluation; balance sheet analysis; discrepancies between price and value.

(Prerequisite, Ec 13)

2½ semester hours credit

Ec 15-16 APPLIED SECURITY ANALYSIS

This course is designed to acquaint the student with methods used by practicing security analysts in their studies of various industries and to provide practical information useful in future analysis of companies operating in these industries. It includes review of basic principles of Security Analysis; tools used by practicing analysts; analytical study of various industries comprising our economy, including the major consumer goods, capital goods, service industries, public utilities and railroads. Practicing analysts who are specialists in their respective industries will comprise the faculty. These instructors will develop the problems affecting their industries, the methods used in appraising their outlook, and the approaches to the problems of analyzing the securities of individual companies within these industries. A term paper is required of each student, during the preparation and writing of which he is assigned to a practicing analyst for technical assistance.

(Prerequisite, Ec 14)

5 semester hours credit

Ec 17 PUBLIC FINANCE

Government policy in terms of public finance has become of vital importance to all aspects of our economy. Vast emphasis is placed by government upon the effects of government expenditures and taxation as means of control. This course is specifically related to five factors: government expenditures, fiscal administration, government borrowing and indebtedness, taxation and other current revenues, federal-state fiscal relationships.

2½ semester hours credit

Ec 21 ECONOMIC GEOGRAPHY

This course is concerned with the role of geography, geology, and climatology in determining the centers of population, the location of natural resources, and the development of agriculture and industry. It considers their location in terms of their natural relationship to the flow of world trade. The socio-economic principles that underlie the development of resources in different countries and climates are emphasized. It also analyzes the political-economic aspects of resource distribution and development in the form of trade and world relationship.

2½ semester hours credit

Ec 22 INTERNATIONAL ECONOMICS

This course attempts to analyze foreign trade and finance in terms of current practices and theories. It discusses national welfare and foreign trade; international accounting and what the balance reveals; the making of international payments and documents used; the rate of exchange; international equilibrium; foreign trade and the national income; principles behind protection; trade control through the tariff, import quotas, exchange control and their evaluation; international commodity agreements and commercial treaties; monetary policy problems; the international gold standard; exchange reserve standards; exchange stabilization fund; the shortage of dollars; the International Monetary Fund; international investments.

2½ semester hours credit

ENGLISH (E)

The value that comes from the effective use of good English in business reports and communications is being increasingly emphasized by business leaders. All students who are candidates for the degree or certificate are required to pursue systematic courses in English. Those having outstanding deficiencies may be required to take additional courses in English.

E 1 BUSINESS ENGLISH

One of the basic requirements for success in business is the ability to express ideas in effective English. This course is designed to provide basic instruction in the fundamentals of word usage, sentence and paragraph construction. A thorough review of grammar and punctuation is provided with frequent drill. The medium of composition is the business letter. The course also includes readings and exercises in vocabulary building.

2½ semester hours credit

E 2 BUSINESS CORRESPONDENCE

This course continues the study of English 1 as it is applied to the needs of business correspondence and communications. Special emphasis is placed on the study of the business letter and the development of skills in expression with continued practice in the construction of sales, collection, credit, and application letters. The business report and the writing of business articles is given close attention.

(Prerequisite, E 1)

2½ semester hours credit

E 3 BUSINESS REPORTS

A study of the structure and organization of the various types of business reports. Assignments include the writing of progress, periodic, research, and technical reports. The student is given practice in the collection, analysis, and interpretation of data, outlining of report materials, and the preparation and use of statistics in graphs, charts, and tables.

(Prerequisite, E 1)

2½ semester hours credit

E 5 PUBLIC SPEAKING

Those who wish to speak convincingly, to overcome self-consciousness, and to develop self-confidence will find this course meeting their needs. Students are trained in the selection and organization of speech materials, the delivery of the speech, and in other important essentials of effective speaking. The entire course is practical and not theoretical. Work is centered around the interests and topics of business men and is specifically adapted to their needs.

2½ semester hours credit

E 11 PUBLIC SPEAKING — PARLIAMENTARY PROCEDURE

This course is designed to train students in public speaking and parliamentary procedures. In content the course augments training in public speaking by adding those speech situations unique to active participation and leadership in organizations whose programs are educational, civic, social, fraternal, veteran, or labor, and whose functions as deliberative necessitate observance of basic parliamentary procedure in keeping with by-laws, constitutions, or charters. Robert's Rules of Order, Revised, is the parliamentary text used.

2½ semester hours credit

E 6 BUSINESS CONFERENCES

The management of modern business is conducted to a large extent through the use of conferences. The objective of this course is to present techniques basic to group leadership. It provides instruction in the planning, participation and leading of conferences. Classes are limited in size to allow regular and frequent participation by students. The conference topics are carefully designed so that the discussions are means of disseminating very worthwhile information regarding business management problems.

2½ semester hours credit

E 9-10 INDUSTRIAL JOURNALISM

Basic news gathering and writing. Trade publications and their functions. Horizontal and vertical coverage. Writing for business papers. House organs — internal and external. Assignments and deadlines. Copyrights and credits. Publicity vs. Propaganda. Reproduction processes. Use of color. Preparation of manuscript for printer.

5 semester hours credit

INDUSTRIAL MANAGEMENT (IM)

With the complex and rapidly changing conditions of modern production, the functions of administration and management must be clearly defined and maximum economies effected. Through the problem approach, these courses train the student to supplant guesswork and trial and error processes with organized knowledge and proven management methods.

IM 1 WORK SIMPLIFICATION I

The course is designed to present the fundamental principles underlying motion analysis and work simplification. Included in the subjects considered are the following: Process and operation analysis through the use of process charts, flow diagrams, operation charts, man-and-machine charts, principles of motion economy. Work place layout, labor-saving tools and equipment, laboratory development work. Practical applications of work simplification with particular emphasis upon cost analysis.

2½ semester hours credit

IM 2 WORK SIMPLIFICATION II

Short review of Work Simplification I. Advanced study and laboratory practice in operation analysis and improvement, man-machine charts, process charts, and micromotion study. Human relations in methods engineering. Other subjects which may be considered will be breakdown of assembly work for conveyorizing, integration of methods and time study, and methods planning.

(Prerequisite, Work Simplification I or equivalent industrial experience) 2½ semester hours credit

IM 3 BASIC TECHNOLOGY FOR PRODUCTION

This lecture and laboratory course is designed to provide students possessing non-technical educational backgrounds with a basic coverage of the fundamentals of mathematics, and shop drawing vital to study in the fields of industrial or production management.

The basic mathematics includes shop arithmetic, the mechanics of algebra approached on a functional basis, and an introduction into trigonometry applied to the right angle triangle. This is woven into the instruction in shop drawing which includes the use of drafting equipment, the principles of orthographic projection and sketching, blueprint reading or interpretation which considers the systems of dimensioning, indications of limits and tolerances, designation of locating points, commercial finishes, etc.

2½ semester hours credit

IM 5 TIME STUDY I

Based upon the best established methods procedures, the fundamental principles of time study are considered as a basis for setting production standards. Subjects included in the course are the following: Introduction to wage incentives and current wage plans. History and development of time study, relation to motion and micromotion study, preliminary observation, technique of making time studies. Rating procedure, development of proper concept of "normal" performance, applying the rating and relaxation factors. Setting job and element standards, use of allowances, treatment of variables, introduction to standard data, synthetic standards, problems in the application of standards. Laboratory practice will supplement the classroom work.

2½ semester hours credit

IM 6 TIME STUDY II

Review of stop-watch time study. Introduction to the use of element time studies for developing standard data. Problems involved in setting up standard data for a variety of operations. Development of tables, families of curves, formulae, nomographs, and multi-variable charts for synthetic rate-setting purposes.

The course also includes the principles of Methods Time Measurement now accepted widely by industry for the setting of standards through the application of establishing time values for specific motions involved. Laboratory instruction will include actual application of M.T.M. to selected operations.

(Prerequisite, IM 5 or equivalent industrial experience)

2½ semester hours credit

IM 7 INDUSTRIAL INSPECTION AND MATERIALS OF PRODUCTION

Fundamental to the study of production processes and the control of quality is a knowledge of the materials of production and the techniques of inspecting the accuracy of processing. This lecture and laboratory course first considers the study of materials, especially ferrous, non-ferrous, special alloy metals, plastics, etc., in terms of their basic characteristics, e.g., structure; hardness; strength in compression, tension, shear; workability; thermal, physical, electrical and chemical properties.

The course continues into the techniques and standard measuring equipment and gauges for mechanical inspection; linear, surface, angular, gear, and thread measurements; "go and not-go" gauges of various types; gauge blocks; optical measuring and gauging practice; discussion of tolerance limitations of machine tools and other processing equipment in common use.

2½ semester hours credit

IM 9 JOB ANALYSIS AND EVALUATION

Basic principles underlying theory of wage calculation, job elements and their definitions, rating scales, writing job descriptions and specifications, selection of appropriate rating plan, setting up job factors and maximum point values, use of several methods of determining specific point values. Development of wage structures.

2½ semester hours credit

IM 11 PRINCIPLES OF PRODUCTION

A basic treatment of the fundamental manufacturing processes. Topics studied include factory organization, manufacturing and assembly sequences, selection and co-ordination of productive facilities, product design, inspection and salvage.

2½ semester hours credit

IM 12 PRODUCTION PLANNING AND CONTROL

This course is designed to include basic problems involved in the production department related to planning, scheduling and control. This course is a sequel to Principles of Production and includes the following subjects: Factory organization, factory planning and layout, materials handling, storage, maintenance, power. Forecasting and budgeting, planning, scheduling, routing, dispatching, subcontracting. Quantity control, quality control, waste control, priorities, allocations, controlled materials plan, records and reports.

2½ semester hours credit

IM 13 QUALITY CONTROL IN INDUSTRY

An introduction to the elements of statistical quality control and its use industrially for attaining reduction in scrap and rework, lower inspection and production costs, lessened complaint and servicing bills, improvement in product uniformity and greater quality assurance. Emphasis is on the utilization of the so-called "statistical tools" to prevent the manufacture of defects. Statistical principles are demonstrated practically rather than mathematically, and actual case histories are introduced to illustrate application of methods.

Included in the subject material are determination of machine and process accuracy; use of histograms to segregate normal and abnormal variability; use of quality control charts for both measurable and non-measurable quality characteristics; rational determination of tolerances; scientific sampling methods for process control; single, double, and multiple sampling methods for acceptance of material by lots; use of Military Standard 105A; how to satisfy government quality control requirements; psychological factors in controlling quality. Students work on typical problems selected from actual cases.

(Prerequisite, Ec 7)

2½ semester hours credit

IM 14 ADVANCED QUALITY CONTROL

This course is designed primarily for those who require a more detailed understanding of the application of quality control techniques. The material covered in Quality Control is enlarged on and a number of the more recently developed techniques are treated in detail. Application of the methods to several particular industries, such as metal-working, textile, aircraft, chemical process, electron tube, screw machine products, is studied.

Subjects covered are special purpose control charts; multi-vari charts; rational sub-grouping principles; pictograms; PD-diagrams; principles of visual inspectors; establishing quality assurance; check inspection methods; special trouble-shooting techniques; organizing a quality control program and introducing it into the factory. Each student conducts a term project involving application of the methods in his own field.

(Prerequisite, IM 13 or equivalent)

2½ semester hours credit

IM 15-16 PRODUCTION PROCESSES

Basic to the study of production is a thorough understanding of the processes and shop production methods employed in the manufacture of products using various types of materials. Concentrated attention is applied to such processes as castings; hot-working, cold-forming, and joining of metals; machine shop production methods; plastics and plastic molding. The common production tools such as shears, presses, press brakes, lathes, boring mills, screw machines, milling machines, drills, shapers, slotters, planers, broaching machines, grinders, and saws are studied in detail including their uses, machine capacities, limitations, flexibilities, etc.

Working with actual products accompanied by production blueprints, the student determines the manufacturing processes required, selects the appropriate machines, equipment and tool setups. Under certain conditions alternate methods and equipment must be used. These are evaluated in terms of their practicality and economic advisability. Process sheets are prepared for all manufacturing operations involved for presentation to the production control department as a basis for scheduling and computation of machine loading charts.

5 semester hours credit

IM 17 MATERIALS HANDLING

The handling of materials as an integrated part of the production program offers much promise in efficiency of operation and reduction in manufacturing costs. This course approaches the problem from both the unit workplace environment and the internal flow of raw materials through the several manufacturing processes to the storage of finished goods and their loading for shipment. Materials handling equipment will be considered in practical terms of engineering characteristics, selection for specific uses, and cost factors of operation.

2½ semester hours credit

IM 19-20 PLANT LAYOUT

This course is taught on a combination lecture and laboratory method using the latest techniques and equipment employed in industrial practice. Instruction proceeds principally by the project method where a plant site is chosen for the manufacture of a specific product. The product is analyzed to determine the processes involved, the number and types of machines and auxiliary equipment necessary for manufacture. Flow charts are prepared and machine and equipment location determined using A.S.M.E. approved two-dimensional templates and three-dimensional scale models.

In addition to the physical arrangement of machines and equipment, consideration is given to the layout of utilities such as power, light, water, sprinklers, drainage, telephones, heating equipment, lavatories, etc. Alternate layouts are considered and all cost factors including estimates of construction changes are evaluated to determine most economical layout. Detailed attention is given to the layout of office areas and departments servicing production as well as areas designed for employee safety and convenience. Design is checked for conformance to local and state regulations pertaining to building codes, zoning, safety, and fire protection. Finished layout drawings are prepared for presentation to management.

(Prerequisites, IM 1, IM 12, IM 15-16)

5 semester hours credit

IM 21 INDUSTRIAL SAFETY — INDUSTRIAL ACCIDENT CONTROL

A non-technical course dealing with the organization and administration of a comprehensive accident prevention program. It will include an analysis of the basic industrial hazards, the various factors involved in industrial accidents with corrective action; the responsibilities and functions of top management, the safety engineer, the supervisor, and the safety committee; the training of employees, supervisors and other management personnel; the investigation and analysis of industrial accidents; protective equipment and clothing; maintaining management and employee interest.

2½ semester hours credit

IM 22 INDUSTRIAL EXPERIMENTATION

The two main problems confronting experimenters in the laboratory, pilot plants, and at factory levels are the evaluation of data and the design of experiments. They are essential tools of the engineer and factory trouble-shooter. Consequently, this course dealing with tests of significance, analysis of variance, correlation techniques, and experimental design is specifically directed at producing greater efficiency and competency for quality control personnel as well as experimenters of all classes.

The section on testing the significance of averages, variances, percentages is concerned with the "u", "t", "F", "L", "J", and Chi-Square statistical tests. The course continues with process trouble-shooting methods of graphical analysis and experiment design; specific experiment designs and analysis of variance for single, double, multiple factor tests; Latin Square and Graeco-Latin Square, Incomplete Latin Square and Youden Square design; importance of balancing and randomizing; pictograms for summarizing results of experiments. The correlation techniques to be considered are the simple linear, tetrachoric, rank and multiple correlations.

The person completing the course will be equipped not only to select an efficient design for his experimental work, but will also be enabled to make an objective evaluation of the data to determine whether the variations in the data are significantly different from those which might be expected purely on a chance basis. It is important to note that the ability to make this kind of distinction helps avoid experimental blind alleys, with the associated vital savings in dollars and days.

(Prerequisite, Ec 7 or equivalent)

2½ semester hours credit

IM 23-24 INDUSTRIAL MANAGEMENT PROBLEMS AND POLICIES

Management case problems illustrating the co-ordination of the basic departments of the business in sales, production, personnel and finance. The cases cover a complete range of management problems and include internal administration, organization, industrial relations, expansion and contraction. The student helps to construct management policy based upon thorough analysis. The course is the gathering point for specialty courses obtained elsewhere in the curriculum.

5 semester hours credit

IM 25-26 ESTIMATING FOR PRODUCTION

This course is designed to tie together and put to use the material contained in several prerequisite courses. It presents the systematic procedures followed in determining the estimated cost of manufacturing a product in a competitive market. Based upon certain known contractual data such as volume, materials and manufacturing specifications, the procedures include determination of quantities of raw materials necessary, their sizes, shapes, and physical characteristics; the analysis of the required processes and individual operations, machines and equipment necessary for fabrication; the determination and cost of tools required; the analysis of direct labor required for each operation; the burden or overhead chargeable against each department; and the total manufacturing cost including the sales and administrative expense.

Working with standard data and actual products with their accompanying manufacturing blueprints, the students will calculate practical and accurate estimates presented in accepted form.

(Prerequisites, A 17-18, IM 1, IM 15-16)

5 semester hours credit

IM 27 PLANT MAINTENANCE

Preventive maintenance of plant and equipment has an immediate relationship to the efficiency and cost of operation. This course is concerned with the organization of the maintenance department and its function as a phase of production; installation, maintenance, and repair of mechanical and electrical equipment and machines, sanitary and employee facilities, buildings and grounds; use of outside contractors; buying and storing of maintenance supplies; watchman service and plant security organization and methods.

2½ semester hours credit

IM 29 QUALITY CONTROL SEMINAR

An integrating course for those who have completed all or a majority of the courses in Quality Control. Basically designed to test the application of the students' knowledge to actual industrial situations, most of the work revolves about the students' own problems. For this reason, the course is strictly limited to those who have a full background in the subject and are in a position to devote outside time and industry to the application of quality control technology. Practice in written and oral report presentation is afforded, with emphasis on methods of selling ideas through reports. The psychology of selling statistical ideas to management is discussed. Weekly round-table discussions are held at which the students are expected to contribute their own experiences. The outside work project constitutes a large share of the course work.

(Prerequisites, IM 14, IM 22, IM 30)

2½ semester hours credit

IM 30 MANAGERIAL CONTROL — QUALITY

A major consideration for effecting a successful quality control program lies in its administration. This course is pointed at bringing an appreciation of the non-technical aspects of administering a quality control program. In developing these concepts, intensive discussion is given to economics of quality; relation of design and inspection to control of quality; organizing for quality control; quality control engineering; integration of quality functions; methods of obtaining quality assurance; and case studies.

(Prerequisite, IM 13)

2½ semester hours credit

INSURANCE (In)

In a complex economic structure, the function of risk bearing becomes vital. The Insurance industry has experienced tremendous growth in serving this need. The courses offered are basic in their presentation and are designed to train for effective careers in one of the many divisions of operation.

In 1-2 FUNDAMENTALS OF INSURANCE

A foundation course to an intelligent understanding of Casualty and Fire Insurance and its function in our economy; nature of insurance and its contract provisions; survey of principal insurable hazards and the forms of insurance available to meet them; rates; analysis of financial statements; types of insurance carriers and their regulation; underwriting and reinsurance; loss adjustment; loss prevention.

5 semester hours credit

In 5 CLAIMS PROCEDURE

The function and organization of the claims department; the claims adjuster, his qualifications, duties, and responsibilities; the theory and procedures of handling insurance claims. This course presupposes a knowledge of the basic coverages, and is handled on a lecture and discussion basis, using case studies, however, limited to general casualty, fire, burglary, bonds, and inland marine insurance.

(Prerequisites, In 11-12; 13-14; 15-16; 17-18)

5 semester hours credit

In 11-12 CASUALTY INSURANCE

This is a comprehensive study of casualty insurance. It includes such insurance contracts as workmen's compensation and employers' liability, accident and health, schedule and comprehensive general liability, and miscellaneous crime coverages. Special attention is paid the policy contract, various rating procedures, endorsements, the methods used to determine premium payments, insurance auditing procedures, etc. The subjects covered are considered in detail through careful analysis of the several underlying insurance contracts.

5 semester hours credit

In 13-14 FIRE INSURANCE AND ALLIED LINES

This course includes the history and development of Standard Fire Insurance Policies, presenting a detailed study of the Massachusetts Standard Fire Policy, its modifying forms and endorsements; methods of rating; policy writing procedures; and loss handling. It includes a study of extended coverage, consequential loss contracts, and collateral fire lines.

5 semester hours credit

In 15-16 INLAND MARINE INSURANCE

Covers the origin, development and present scope of Inland Marine Insurance and a complete analysis of the provisions of transportation policies, property floaters, bailees' customers' floaters and special risk policies. The course is designed to provide a thorough grounding in the fundamental principles of Inland Marine Insurance, with special emphasis on policy forms, rates, underwriting and the applicability of the coverages to the needs of the insuring public.

5 semester hours credit

In 17-18 FIDELITY, SURETYSHIP, AND CRIME INSURANCE

This course is introduced by a general consideration of crime insurance. Coverage under fidelity and suretyship is discussed individually, including the various forms of fidelity, judicial, contract, public official bonds, license and permit bonds, miscellaneous surety bonds, and the comprehensive crime policies. The several bond forms under the foregoing are studied individually, supplemented by the underwriting procedures in conjunction with the use of the manuals.

5 semester hours credit

In 21-22 LIFE INSURANCE FUNDAMENTALS

The economic function of life insurance; the life insurance carriers; estimating the life risk; the mortality table; the Life Insurance Equation; premiums, reserves; loading; surplus and dividends; fundamental principles underlying the life insurance contract; types of policies; policy conditions; endorsements; annuities; group insurance. *5 semester hours credit*

In 23 GROUP INSURANCE

One of the rapidly developing divisions of insurance attuned to the changing economic concepts and social consciousness of progressive management at a time when social pressure for employee security is forcing legislation in this direction. The course establishes the rightful place in modern business of employee benefit plans made possible through group insurance and emphasizing the benefits to both the management and the employee.

It considers in detail the types, characteristics, scope, and accomplishments of the several types of coverage including Group Life together with Accidental Death and Dismemberment Benefits; Accident and Sickness Benefits; Hospital and Surgical Benefits for both employees and their dependents; Group Annuities; etc. Especial attention is given to the more recent developments in Group Insurance.

Through case material it discusses the sources of prospects, presents the techniques of analysis and proposal preparation, and suggests the specific sales techniques peculiar to Group Insurance involved in the ultimate presentation and closing of sale.

2½ semester hours credit

In 27-28 BUSINESS INSURANCE

Business Insurance is concerned with the problems of business agreements involving proprietorships, partnerships, and corporations, and key men within these business structures as well as pension trusts and tax problems. The course is designed to analyze the needs in the above and to suggest insurance solutions.

Fundamentals of Estate Planning is a study of the problems involved in the ownership of properties and the protection of the estate wherein transfer costs, inheritance taxes, federal and state gift taxes, wills and trusts, rights of creditors, etc., are involved.

5 semester hours credit

LAW (L)

Underlying the ever-increasing complexity of modern business is a growing body of law which defines and directs business operations.

L 5-6 CONTRACTS

Contracts: their importance to the business man in the everyday conduct of his affairs, why contracts are necessary, how they are made and enforced; the subject matter of contracts; the rights and liabilities of the parties; the termination of contractual relationships.

5 semester hours credit

L 7-8 CORPORATIONS, PARTNERSHIPS, AGENCIES

Problems of organizing various businesses, the forms of business enterprises; the powers and liabilities of business organizations and their officers; inter-corporate problems; rights of creditors and stockholders; reorganization and termination of a business organization's affairs. Agency: the function of agents in present-day business; the legal relationships among agent, employee and third parties; the duration of agency relationship and methods of termination.

(Prerequisite, L 5-6)

5 semester hours credit

L 9 LAW OF SALES

Transfer of property interest in goods; nature of sales contracts; Statute of Frauds; seller's warranties; rights and remedies of sellers and buyers; unfair and illegal market practices such as infringements of trademarks, disparagement of competitors, etc.

(Prerequisite, L 5-6)

2½ semester hours credit

L 11 NEGOTIABLE INSTRUMENTS

Legal devices for raising money and extending credit, such as promissory notes, bills of exchange, checks, trade acceptances, bills of lading, warehouse receipts; formal requisites of negotiable paper; negotiation; discharge rights and defenses.

2½ semester hours credit

L 12 CREDITORS' RIGHTS

Mortgages; pledges; conditional sales; suretyship and guaranty; bailments; bankruptcy.

2½ semester hours credit

L 13 BUSINESS LAW I

Contracts: nature, kinds and formation of contracts; essential elements; form and interpretation of contracts; breach, remedies and damages. Agency: nature, purpose and formation of agency relationship; rights and duties of principal and agent, scope of agent's authority; rights and duties of principal and third persons; termination of agency. Employer and employee: compensation laws; duties of master; contributory negligence doctrine; injuries to third persons.

2½ semester hours credit

L 14 BUSINESS LAW II

Negotiable instruments: bills, notes and checks; requirements of a negotiable instrument; negotiation; liabilities and defense of parties; procedure upon dishonor; discharge. Bailments: nature and kinds; rights and duties of parties; carriers; documents of title. Sales: nature of sales contracts; warranties; transfer of title; rights and remedies of seller and buyer. Insurance: formation and function of insurance contract; kinds of policies; legal phases of life, property and other insurance. Suretyship: rights of the surety and the guarantor; rights and duties of the creditor; defenses of the surety and guarantor.

(Prerequisite, L 13)

2½ semester hours credit

L 15 BUSINESS LAW III

Partnerships: nature, kinds and formation; rights and duties of partners; partner's authority to bind firm; relation of partners and third persons; dissolution and winding up. Corporations: nature and creation; charter; powers, rights and liabilities; nature and kinds of capital stock; rights and liabilities of stockholders; directors and officers. Mortgages: rights and duties of mortgagor; rights and duties of mortgagee; rights after default. Property: landlord and tenant relationship; classification of tenancies; rights and duties of landlord; rights and liabilities of tenant. Bankruptcy: Federal Bankruptcy Act; acts of bankruptcy; adjudication; rights and duties of bankrupt; unsecured, secured and priority claims; extensions, compositions, and other debtor-relief provisions; discharge.

(Prerequisite, L 13)

2½ semester hours credit

L 16 GOVERNMENT CONTROLS IN BUSINESS

A study of the economic and political relationships which exist between business and government with particular reference to the Sherman Act and Anti-Trust Laws; Securities and Exchange Commission; Interstate Commerce Commission; regulation of public utilities; the Co-operative Movement; the Social Security Act; government and labor; business regulation by taxation.

2½ semester hours credit

MARKETING (D)

Marketing enters into and influences every field of business and includes not only the direct process of the sale of goods, but the whole organization by which goods find their way from the original producer to the ultimate consumer. The change in the economic structure during the past ten years, growing out of higher standards of living, the development of new occupational interests, and the shift of population to large cities, has tended to increase the cost of marketing of goods. Just as the elimination of waste in production was the keynote of business fifteen years ago, the reduction of expense and the introduction of more efficient methods in distribution are the foremost thought of business leaders today. For this reason courses in marketing form one of the basic elements in a business education.

D 1-2 MARKETING

An understanding of the various methods in common use for selling goods and of the typical problems that arise in the course of distributing goods from the manufacturer through the middlemen and dealers to the consumers is provided. The selling problems of the manufacturer, the wholesaler, the retailer, and the specialty agent are studied in relation to the various types of industries and commodities.

5 semester hours credit

D 3 PRINCIPLES OF SELLING

This course deals with the evolution of modern salesmanship, its history, development, and opportunities. The psychology of selling, preparation for the interview, the proper approach, arousing the buying urge, the meeting of sales resistance, the closing of the sale, and the qualities of good salesmen are among the topics discussed.

2½ semester hours credit

D 5 SALES MANAGEMENT

This is a continuation of the course in the Principles of Selling. It includes study of the types of sales organizations, the work of sales executives, sales planning and policies, sales campaigns, management of the sales force, financing of sales, and the control of sales operations.

(Prerequisite, D 3)

2½ semester hours credit

D 6 SALES PROMOTION

The function of sales promotion; the development of plans and materials for stimulating sales; the consideration of publicity media; the preparation of direct advertising pieces for use among the sales force of the manufacturer or wholesale distributor; functions and uses of direct advertising, direct-mail advertising and radio advertising; the planning of sales campaigns; co-ordinating advertising and sales efforts; the preparation of sales manuals, display techniques, portfolios, etc., for use of the sales force.

(Prerequisites, D 1-2, D 3, D 10)

2½ semester hours credit

D 7 MARKET RESEARCH

This course deals with the techniques of research investigations in the collection and utilization of data relating to the problems of marketing. It includes the planning of mail and field investigations, preparation of material, testing results, interpretation of findings, preparation of reports leading to the development of new products, sales methods or sales areas.

(Prerequisites, D 1-2, Ec 7, Ec 8)

2½ semester hours credit

D 9 INDUSTRIAL PACKAGING AND PACKING

The science of packaging and packing for protection during shipment has experienced rapid advance. This course is devoted to current practices of industry as well as specifications applied to government contracts. Considered in this course are the basic types of containers; inner packaging; container design and utilization; dynamics of cushioning; government packaging, packing, and marking; testing of materials and containers; consumer packing-machinery and equipment; packing, loading, and shipping heavy apparatus; specifications for materials and containers.

2½ semester hours credit

D 10 PRINCIPLES OF ADVERTISING

A comprehensive course designed to familiarize the student with the nature and scope of advertising and its place in the commercial and economic structure. History, definition, and functions of advertising. Organization and functions of advertising departments and advertising agencies. Varieties of advertising and media. Problems, market investigation, planning campaigns. Laws, ethics, and regulations. A study of the broader aspects of advertising with special emphasis on current trends and developments.

2½ semester hours credit

D 11 ADVERTISING PROBLEMS

A course designed to bring to the student the intimate details of planning an advertising campaign; the solving of advertising objectives; and the planning of advertising strategy. Numerous actual case histories are covered in classroom discussion with particular emphasis on the latest advertising trends and practices.

(Prerequisite, D 10)

2½ semester hours credit

D 15 ADVERTISING COPY

A course designed to furnish essential groundwork for successful copy writing. Includes study of market-analysis, product and consumer research; class discussion of and participation in comparisons of media and methods, from the standpoint of the copy writer; drill and practice in writing specific industrial, general, retail, radio and mail-order advertising copy; development of techniques, vocabulary and facility.

(Prerequisite, D 10)

2½ semester hours credit

D 16 ADVERTISING PRODUCTION

The methods and techniques of advertising production, including layouts; use of illustrations; the development of typography; types and type selection; composition; engraving processes; the several printing processes, including letterpress, lithography, and gravure; specifications and estimates.

(Prerequisite, D 10)

2½ semester hours credit

D 17 ADVERTISING MEDIA

This course is intended to prepare the student of advertising for the intelligent choice of advertising media requisite to adequate and economical market approach and coverage. It includes practical analysis of consumer, trade and professional magazines, newspapers and other publications, direct-mail, radio and television, outdoor advertising; fundamental product research to establish criteria for advertising media selection; a study of relative values of media from the standpoint of merchandising from manufacturer, through retailers, to the consumer.

(Prerequisite, D 10)

2½ semester hours credit

D 21-22 PRINCIPLES AND PRACTICES OF FOREIGN TRADE

The course is designed to introduce the student to world trade, its development and current status, the economic and political developments which affect the volume and direction of the flow of goods. Subjects discussed are the balance of international payments; trade agreements; tariff and non-tariff control measures and policies; export and import departments; middlemen; foreign agents and distributors; branch houses; handling import and export traffic; study and choice of markets; settlement of trade disputes; international banking facilities, foreign credits; foreign exchange; foreign investments and foreign exchange. The execution of foreign trade documents will be carried out throughout the course.

5 semester hours credit

D 23 LEGAL ASPECTS OF FOREIGN TRADE

A survey course of commercial law for foreign traders. It is concerned with the common legal problems in international trade. The background and development of Anglo-American and civil (or continental) legal systems are considered. The law merchant; sales; letters of credit; contracts; partnerships; taxation; bankruptcy and insolvencies; powers of attorney; trademarks, designs and commercial names; types of business organization, partnership, business corporations, and their counterparts in foreign countries; legal procedure; international trading combinations; history and background of American customs duties; customs officials and procedure in the collection of duties, American customs courts, foreign trade zones and ports; methods of settlement of trade disputes are covered.

2½ semester hours credit

D 24 FOREIGN MARKETING

The methods and procedures of selling in the foreign market. How to analyze potential markets; conduct market surveys that encompass the human, economic, competitive and geographic factors as well as the financial, commonly called the "dollar shortage." Establishing the type of distributor best suited for the product and the country concerned. Warehousing in foreign countries, advertising with an eye to local prejudices and tastes. Overcoming local inertia and competition. Protection of industrial property and trade names, shipping and documentation. Emphasis will be on selling the product, maintaining the market and the good will of the customer and overcoming competition from foreign traders from other countries in the same field.

2½ semester hours credit

D 25 GLOBAL TRANSPORTATION

This course will be devoted to transportation by land, sea and air and the problems of global trade shipments. The economic character of the international trade transportation industry; types and methods of service, regulations and rates, and the important international treaties, conventions and agreements affecting such transportation will be emphasized.

2½ semester hours credit

D 26 SEMINAR IN WORLD TRADE

Study, investigation and conferences on special and particular problems in the field of international trade. The problems of finance, governmental regulations, legal aspects of particular countries and methods of research for the solution of questions will be covered. The round-table method will be employed and the interests of the individual members will be emphasized. The Seminar will be directed by a member of the faculty, but students will work in groups together with the various members of the faculty of the WORLD TRADE INSTITUTE. Where available, outside experts and authorities from governmental and private organizations will participate in the work of the Seminar. A thesis will constitute the final examination and will be required from students seeking credit for a Certificate or Degree.

2½ semester hours credit

D 31 PURCHASING

A practical study of the functions and duties of the purchasing agent, the organization and administration of his department, and his relations with other departments. The following are representative of subjects discussed: the purchasing function, qualifications and responsibilities of the purchasing officer; purchasing organization and procedure; quality determination, inspection and inventory control; source selection and procurement by manufacture; price policies, forward buying and procurement budgets.

2½ semester hours credit

D 33 CREDIT FUNDAMENTALS

This course furnishes instruction in the organization and functions of the commercial credit department; the classification of credit and the several types of agencies involved; the factors involved in a credit risk; the investigation of credit factors; credit services.

2½ semester hours credit

D 34 ADVANCED CREDITS AND CREDIT PROBLEMS

This course continues into the more detailed problems of the credit manager in determining credit disposition. The following subjects are included: ratio analysis of financial statement figures, statement analysis by comparison, collection problems and procedures, insolvency and its various forms, creditors' legal aids, credit insurance and guaranties, the general problems of the credit manager in administering his function of the business organization, activities of the National Association of Credit Men.

(Prerequisite, D 33)

2½ semester hours credit

D 36 MANAGEMENT OF A SMALL BUSINESS ENTERPRISE

The financial, legal and general management essentials involved in organizing and operating a small to medium-sized concern. The course discusses the following: factors in business success; types of business enterprises and their evaluation for proper selection; forms of business organization, their advantages and disadvantages; problems in selection of location, and the purchase or lease of real estate and equipment; capital requirements and sources of funds; state and local regulations; purchasing; production; inventories; sales; bank and trade credit; customer credit; taxation; record-keeping; control of business risks.

2½ semester hours credit

OFFICE MANAGEMENT (OM)

Office management has developed rapidly in scope and status in response to the technical and diversified nature of the problems arising and the current trends toward the scientific approach to the solutions of these problems.

OM 1 SCIENTIFIC MANAGEMENT IN OFFICE PRACTICE

This course is intended to provide basic instruction in the tools of modern scientific management, work simplification, time study, job evaluation and merit rating; work simplification as a means of improving work methods and procedures through motion study and process analysis; time study for work measurement and the establishment of standards; and job evaluation for determining the equivalency among the several jobs as a basis for a wage and salary structure. These scientific tools will be applied to office practices. Laboratory exercises will accompany the lectures.

2½ semester hours credit

OM 2 OFFICE ORGANIZATION AND ADMINISTRATION

This course considers the organizational, human, physical, and operational problems encountered by the manager of the modern office. It stresses the importance of the proper place of the office management function in effective company organization; the value of proper selection techniques, supervision, adequate compensation policies, and employee relations in building up an office force with desirable attitudes and abilities. It discusses principles of efficient office layout; working conditions; the analysis of office methods and systems; work simplification; the selection and use of office machines; and common office functions. Every effort is made to use the student's own office background as a sounding board for the subject matter.

2½ semester hours credit

OM 3 FORM DESIGN AND CONTROL

Forms in their relationship to office systems; forms designing tools, drafting techniques, factors and principles of form design; problems of paper size and quality for specific usage; carbons, typography and printing specifications; forms housing; the design of general and specialized forms including system cards, visible file cards, tickets, bookkeeping and addressing machine forms, carbon interleaved forms, reproduction forms (holograph and offset processes), strip accounting forms; forms control organization and administration.

2½ semester hours credit

OM 4 OFFICE SYSTEMS AND PROCEDURES

This course is devoted to the techniques of system design to most effectively record and expedite the operations of the office and/or the factory. It deals with the elements of system analysis; methods of obtaining data and recording of existing procedures; procedure charts and charting techniques; developing, testing, installing and adjusting new systems; measuring effectiveness of the system. Considerable time will be devoted to laboratory analysis of certain recognized systems and for the discussion of design problems submitted by members of the class.

(Prerequisite, OM 3 or equivalent)

2½ semester hours credit

PERSONNEL AND INDUSTRIAL RELATIONS (IR)

The management of human relations in business represents one of the most challenging aspects of our industrial developments. Opportunities are unlimited for qualified persons in all phases of management with a sound understanding of the underlying principles of labor-management relations. The continuance of our American system of industrial economy demands a more thorough understanding of the principles underlying labor-management relations and their responsibilities one to the other and mutually to the public.

IR 5 PSYCHOLOGY FOR BUSINESS AND INDUSTRY

Business psychology is the study of predicting and influencing human behavior in business. It provides an understanding of man's mental life, of how the individual and the group behave and are influenced in their behavior, and of how the business man may predict and control his own behavior and that of those with whom he works. The study and analysis of the student's own personal problems and behavior constitute a valuable and interesting phase of the course.

2½ semester hours credit

IR 6 PRACTICAL TRAINING METHODS FOR BUSINESS AND INDUSTRY

Subjects covered range from principles and methods of effective "on-the-job" training to the handling of formal or informal training groups. The objective is to provide a thorough grounding in the psychology of learning; techniques of effective teaching; personality qualifications for successful training; a review of job instruction training (J. I. T.) and job relations training (J. R. T.); use of the case analysis method; role playing; training tools; visual aids; the value of example and demonstration; methods of analyzing and meeting training needs; the principles and practices of organizing and administering a training program; follow-up procedures to insure results; class projects to provide practical application of material covered in the course.

2½ semester hours credit

IR 7 INDUSTRIAL SOCIOLOGY

The social, psychological, and biological factors are interacting forces affecting the behavior of workers. This course in the sociology of work relations attempts to study the worker in terms of his needs, desires and ambitions but also considers him as one of a group in the larger area of group dynamics. It discusses the many significant social adjustments made by the individual throughout his work-life; the sociological aspects of worker selection and placement upon industrial morale and teamwork; the formal organization of management and the unions; the strategy and tactics of union-management bargaining; occupational mobility and security; industry and society.

2½ semester hours credit

IR 8 TECHNIQUES OF SUPERVISION

Supervision is the function of directing, controlling, and co-ordinating the combined efforts of men, machines and materials. Positions of managerial capacity involve the responsibility of supervision. This course is designed to provide basic instruction in such phases as the supervisor's responsibilities and objectives; planning the work and employee assignments; employee's attitudes toward management, equipment and materials; records and reports; improving individual performance; progress of employees; personnel relations; handling of grievances; training; administering of company policies; matters related to wages; the development of a congenial, enthusiastic community of work interest through the co-ordination of the work of all employees.

2½ semester hours credit

IR 9 WAGE ADMINISTRATION

The course is a comprehensive study of the underlying theory of industrial wages. Specific consideration is given to job and salary analysis and evaluation; merit rating; incentive wages; wage payment plans. The importance of a sound wage structure to healthy employer-employee relations and the administration of wages through collective bargaining from the production as well as the labor relations point of view.

2½ semester hours credit

IR 11-12 PERSONNEL ADMINISTRATION — HUMAN RELATIONS

Effective handling of human problems has become a factor of vital importance to management. This course in human relations in business is the foundation to all personnel policy and offers an approach or understanding of value not only to those in personnel work but also to all persons having supervisory relationships. Subjects included for discussion are the techniques of approach to situation analysis; problems in selection; training; employee rating; change of employee status; supervision; wage policies; complaints and grievances; employee morale; labor turnover; discipline; health; safety; employee participation; collective bargaining; public relations.

5 semester hours credit

IR 13 PERSONNEL MANAGEMENT PRACTICES

This course in contrast to IR 11-12 is specifically related to the organization, function, and procedures of the personnel department. It is concerned with such problems as the organization of the personnel department; its relationship to management; recruitment of manpower; techniques of interviewing and counselling; employee selection; testing; proper job placement; training; job analysis and evaluation; merit rating; promotion, transfer, discharge; employee publications; standards and conditions of employment; personnel forms, records, and reports.

2½ semester hours credit

IR 15 EMPLOYMENT TESTING

Selection and placement procedures usually comprise several steps, including the interview, psychometric testing, references, etc., all of which are fitted together to form an over-all judgment. This course is concerned with tests used in business and industry to determine aptitudes, personal characteristics and qualifications for employment, proper job placement, counselling, promotion, special training, supervisory or executive potentialities. It discusses tests in terms of type and purpose, test characteristics, test construction, test interpretation, use and limitations of testing.

2½ semester hours credit

IR 22 LABOR-MANAGEMENT RELATIONS

This course provides a basic treatment of labor economics, including the history of the labor movement and of industrial relations, with emphasis on the present period; theory of collective bargaining; effects of collective bargaining upon income of labor, employment, accumulation of capital, and national income. Policies and practices of labor and management in respect to hiring and layoffs, technological changes, wages and market position, closed and open shop, union-management co-operation, government regulation of labor relations, etc. The problem of strikes and lockouts. Public policy as to industrial relations.

2½ semester hours credit

IR 23 LABOR LEGISLATION — UNION-MANAGEMENT RELATIONS

Government and Labor-Management Relations and the development of labor legislation. The purpose, policy and jurisdiction of the National Labor Relations Act, as amended by the Taft-Hartley Act. A detailed study of the Labor-Management Relations Act, 1947 (Taft-Hartley Act). The Fair Labor Standards Act of 1938 (Wage and Hour Law) as amended by the Portal-to-Portal Act of 1947. Consideration of the procedures, powers and limitations of the agencies administering the statutes.

(Prerequisite, IR 22)

2½ semester hours credit

IR 24 LABOR LEGISLATION—STANDARDS AND CONDITIONS OF EMPLOYMENT

A course comparing and contrasting Federal and State laws which affect the worker in his daily employment by regulating minimum wages, maximum wage ceilings and related wage regulation; hours, overtime pay, and child labor. It also discusses Federal Old Age and Survivors Insurance, Unemployment Insurance, Workmen's Compensation, Veterans' Re-employment Rights, and Fair Employment Practices Acts.

(Prerequisite, IR 22)

2½ semester hours credit

IR 25 THE LABOR AGREEMENT—NEGOTIATION AND ADMINISTRATION

The negotiation, re-negotiation, and administration of labor contracts; study of the component clauses such as union recognition and security, management prerogatives, seniority, vacations, wages, hours, working conditions; grievance analysis and arbitration procedure developed through case studies in actual labor-management relations as affected by such clauses, and the entire collective bargaining agreement and relationship.

(Prerequisite, IR 22)

2½ semester hours credit

IR 27 LABOR RELATIONS SEMINAR

An advanced discussion of current labor-management problems such as union responsibilities, management responsibilities, the annual wage, profit sharing, criteria for wage determination, welfare programs, etc. Cases under consideration will cover problems that are timely and specific. Class limited in size.

(Prerequisites, IR 22, IR 23, IR 25)

2½ semester hours credit

PUBLIC ADMINISTRATION (PA)

The increasing complexities of the administrative functions of government present problems requiring the application of sound business and technical knowledge. Today as never before government, through its numerous agencies and expanding control legislation, is regulating the operation and influencing the direction of business policy. Courses in this department are designed to provide practical and specialized training for the increasing number of persons planning careers in governmental service.

PA 1 AMERICAN GOVERNMENT AND POLITICS

This is an introductory survey of the constitutional principles, functions and structure of our National Government. Special reference is made to the relationship between the citizen and his government in regard to policy making in our democratic country.

2 semester hours credit

PA 2 AMERICAN GOVERNMENT AND POLITICS

This course is a continuation of the study of our National Government with a more detailed analysis of the legislative, executive and judicial relations, the role of the United States in foreign affairs and the service and control functions of the government.

2 semester hours credit

PA 3-4 COMPARATIVE GOVERNMENT

A comparative and systematic survey of modern government and politics with special emphasis on the governments of Great Britain, France and the Soviet Union. Consideration is also given to the developing postwar governments.

2 semester hours credit

PA 5-6 ENGLISH AND AMERICAN CONSTITUTIONAL HISTORY

A study of the origin and development of the English Constitution in terms of institutions and concepts that form the background for the American Constitution. The history and principles of American constitutional law designed to give the student an understanding of case-law and the significance of the courts in the American system of government. Among the special topics covered are the power of the Supreme Court to pass upon statutes, the relation of national and state powers, civil rights, and the Commerce clause. Highly recommended for students planning to study law.

4 semester hours credit

PA 7 AMERICAN POLITICAL PARTIES

A comprehensive analysis of the American system of politics in action. It includes the two party system, their histories and platform policies; third party and minority party movements; the group contenders for power, pressure groups and their techniques of operation; state and local politics; the electorate and its behavior.

(Prerequisite, PA 1-2)

2 semester hours credit

PA 8 AMERICAN FOREIGN POLICY

An historical survey of the foreign relations of the United States from 1775 to the present. The course is concerned with the major trends and influences, traditional policies, and actual practices in our foreign relations. One of the objectives of the course is to provide the student with a better understanding of the position of this country in world affairs today.

4 semester hours credit

PA 9 INTERNATIONAL POLITICS

The socio-economic-geographic factors affecting international relations; the State System — the origin and development; international politics as a struggle for power; nationalism; limiting factors including balance of power, international morality, international law, sovereignty; the problem of peace; international organizations, e.g., the League of Nations, the United Nations, etc.; the United States and Soviet Russia; the struggle for the minds of men.

2 semester hours credit

PA 10 MODERN POLITICAL THEORY

A critical study is made of the major developments in political theory, with special reference to the influence of these developments upon American politics and political institutions. Attention is paid to the modern conflict between the democratic and the totalitarian conceptions of the state.

2 semester hours credit

PA 21-22 UNITED STATES HISTORY

The political, social, and economic development of the United States is traced from the colonial period to the present with special emphasis upon the period since the Civil War. It marks the transition from an agricultural to an urban industrialized society and the problems incidental to our emergence as a dominant world power.

4 semester hours credit

PA 23 SOCIOLOGY

This course considers the factors affecting the social life of man; the contribution of biological, geographic and cultural factors in the evolution of our present society; theories of social progress; origin and values of our major social institutions; the interdependence of a well-adjusted personality and a healthy society; how our mores, customs, and family determine our prejudices.

4 semester hours credit

PA 24 SOCIAL PROBLEMS AND PATHOLOGY

This course treats more specifically with the major social problems as poverty, and unemployment; race antagonisms; population pressures, and mobility; family disorganization; political corruption; crime, etc. These problems are also considered in the light of the individual's adjustment to these situations and their resultants in mental defectiveness and disease, alcoholism and drug addiction, suicide, juvenile delinquency, crime, and pathologies of domestic relations.

(Prerequisite, PA 23)

4 semester hours credit

PA 25 CRIMINOLOGY

The nature and cause of crime; the criminal as a social problem; the theory of punishment as a deterrent (Should it be punishment to fit the crime, or punishment (treatment) to fit the criminal?); the individualization of treatment; social, cultural, and developmental factors affecting crime; psychiatry, social work, and religion in criminal treatment.

2 semester hours credit

PA 26 CRIMINOLOGY

Prison systems in the United States and Europe; the Pennsylvania and Auburn systems compared; the reformatory and Borstal of penology; the indeterminate sentence; probation and parole and indeterminate methods of treatment; police methods and practices; procedure in adult courts, juvenile courts, and in courts of domestic relations; the jury trial, its strength and weaknesses; the law of evidence; the plea of insanity.

2 semester hours credit

PA 31 PRINCIPLES OF PUBLIC WORKS

The administration of public works is one of the most important aspects of municipal management. This course concerns itself primarily with (1) water; its sources, uses and rates of consumption, storage facilities, distribution systems and equipment, water quality and treatment, fire services; (2) storm water drains and sewerage systems, sewage treatment and disposal; (3) incineration and waste disposal; (4) cemeteries; (5) recreation facilities; (6) highway construction and maintenance.

2½ semester hours credit

PA 33-34 PUBLIC WORKS II

This course considers in detail problems of design, contracting and construction procedures, materials, equipment and cost estimating. A typical New England town is developed with emphasis on zoning, street layout, water supply, sewerage, drainage, highway construction and maintenance, recreation areas and municipal services.

5 semester hours credit

PA 35 MUNICIPAL ACCOUNTING I

This course introduces the applications of accounting principles to governmental accounting. It discusses compliance with budgetary provisions, appropriations and funds; classification of revenue and expenditure accounts; preparation, presentation, adoption, and execution of the budget; special budgets; balance sheets; general fund revenues and expenditures; bond funds.

2½ semester hours credit

PA 36 MUNICIPAL ACCOUNTING II

This course is a continuation of PA 35 and is based upon the classification and function of municipal accounts as developed by the Massachusetts Department of Corporations and Taxation, Division of Accounts. It considers the following: sinking, working capital, special assessment, trust and agency, and utility funds; general fixed assets, general bonded debt, inter-fund relationships, cash, investments, general property taxes, cost accounting, and financial reports.

2½ semester hours credit

PA 37 MUNICIPAL FINANCE

This course is basically concerned with the financial structure of a municipality, its sources of revenue, budget preparation, temporary and long-term financing to meet operational needs; development and analysis of debt statements to determine the community's fiscal ability to pay. The course includes discussion of the general laws governing municipal financing; the money markets, their operations and effect upon municipal financing; bond issues, average maturities and coupon rates; credit ratings; tax title liens, etc.

2½ semester hours credit

PA 38 MUNICIPAL LAW

The course in municipal law is intended to set forth the basic functions of a municipal corporation together with an explanation of its relationship to the state, its own inhabitants and to persons with whom it deals to the end that the student may be aware of the problems encountered by municipal administrators.

2½ semester hours credit

PA 39 TECHNIQUES OF MUNICIPAL MANAGEMENT

The course introduces the student to a basic understanding of the city manager, his job qualifications and problems. It discusses the questions of organization and reorganization, personnel policies including job analysis and evaluation, and considers individually the several major areas of responsibility as follows: finance, budgetary control, cost accounting, debt administration; legal regulatory practices; public health and safety, sanitation; welfare and charities; public services, schools, hospitals, libraries, recreation, utilities; fire and police protection; interdepartmental and public relations; planning and research.

2½ semester hours credit

PA 40 STATE AND LOCAL RELATIONS

The objective of this course is to explore the areas of operation wherein the municipality has a close working relationship with the state. It includes a careful analysis of the executive, judicial, and legislative branches of the state government, emphasizing their individual functions, duties, and responsibilities. It is particularly concerned with the legislative processes and procedures as they affect municipal government as well as such phases of administration as state, federal and local taxation; distribution of state funds in forms of grants-in-aid, and shared taxes; state and local welfare; school aid, etc.

2½ semester hours credit

PA 41 PRINCIPLES OF ASSESSING

The course, based upon the general principles of Massachusetts appraising for taxation purposes, considers the organization and functions of the Assessing Department with established practices of assessment and recording of real and personal properties for purposes of taxation.

2½ semester hours credit

PA 43-44 COUNCIL MANAGER-PUBLIC RELATIONS

An historical development of the types of municipal government leading to the more recent city-manager form. The advantages and disadvantages of each is discussed in terms of executive administration. The course considers the municipal manager in terms of his operating relationships and responsibilities to the council and other elected boards and enters into the broader field of public relations including administrative reports and reports to the public.

5 semester hours credit

REAL ESTATE

Real Estate occupies an important position in our social economy. The courses in this department are practical in their approach, designed to provide the necessary tools for those planning careers in any of the several phases of operation within this field.

RE 1 REAL ESTATE FUNDAMENTALS

This course examines real estate's place in our social economy. The operation and forces of the market itself, and its relation to over-all public interest; it includes land economics and development, the market, building and its problems, building construction, brokerage, starting a real estate business, mortgage lending, remodeling, insurance, planning and zoning, Government Legislation—V.A. Loan Guaranty and Federal Housing Administration insurance on G.I. and non-G.I. loans.

2½ semester hours credit

RE 2 REAL ESTATE LAW AND CONVEYANCING

This course covers the legal processes and instruments used in controlling real estate ownership and transactions involving the acquisition, use, enjoyment and disposition of real estate and including land titles, estates, contracts, agreements of sale, deeds, mortgages and foreclosures, easements, liens, leases, landlord and tenant relations and liabilities, purchase and sale of real estate, conveyancing, wills and probate, building and zoning laws, and insurance.

(Prerequisite, RE 1)

2½ semester hours credit

RE 5 REAL ESTATE INVESTMENT AND MANAGEMENT

This course offers more of a practical than theoretical approach to the relationship which exists between real estate investment and management, placing particular emphasis on the advantages and risks of investment in real estate, types of real estate investments, the workings of the real estate operator with regard to exchange of real estate and speculation, financing of real estate purchase and development, the relation of investor to manager and broker, real estate management as a business, the organization of a management department in a brokerage firm, management policies, rent and rental problems, the fundamentals of apartment house management and co-operative apartments.

(Prerequisites, RE 1, RE 2, A 13-14)

2½ semester hours credit

RE 6 OPERATING A REAL ESTATE BUSINESS

For the person who is about to enter the real estate brokerage business, and as a refresher course for those already established in the business, this course offers new ideas from authoritative sources, as well as general principles and practices of the business. Included in the course are lectures and discussions on what real estate embraces, getting started in the real estate business, establishing an office, pitfalls to avoid, the art of selling, the sale from start to close, land subdivision, renting and leasing, women's field in real estate, hiring and training salesmen, advertising, publicity and promotion, and compensation for brokers and salesmen.

2½ semester hours credit

RE 7 REAL ESTATE FINANCE

An advanced course dealing with the current methods of financing real estate, especially designed for realtors, bankers, attorneys, appraisers, as well as students pursuing the real estate program. It considers banking systems, instruments of finance, including discussions of long-term leases and bond issues; techniques of mortgage lending; financing various types of real estate; the effect of income taxes on financing. The functions of the real estate broker and the government financing agencies form a base for this course. They are supplemented by discussions pertaining to the influence of federal financing institutions upon the field of real estate as a segment of our economy.

(Prerequisites, RE 1, RE 2)

2½ semester hours credit

RE 9 REAL ESTATE SALES AND ADVERTISING

The selling of real estate calls for specialized applications of the principles of selling and advertising, basic to which are the techniques of property listing; the securing, classifying and analyzing of prospects; methods employed in selling the various kinds of residential, business and industrial properties; creative selling; trading and exchanging; financial aids in selling; the economics and techniques of advertising; women in the field of real estate sales.

(Prerequisites, RE 1, RE 2)

2½ semester hours credit

RE 11 REAL ESTATE APPRAISAL — RESIDENTIAL PROPERTIES

This course is designed to provide the student with the basic knowledge and tools necessary to enable him to appraise residential properties. Study is made of valuation concepts, the purposes of appraisal; the sources of, collection, and application of data used to prepare appraisals; the use of tables, residual techniques; special purpose properties; the summation and final estimate of value, and the writing of appraisal reports; preparation and presentation of expert court testimony.

(Prerequisites, RE 1, RE 2)

2½ semester hours credit

RE 13 REAL ESTATE APPRAISAL — COMMERCIAL AND INDUSTRIAL PROPERTIES

Presented in this course is the analyzing of business neighborhoods, the special appraisal functions, as applied to the following commercial and industrial properties: various types of business properties, retail store properties, heavy and light manufacturing properties, warehouse and waterfront properties, special purpose properties, banks, indoor and outdoor theaters, garages and gasoline stations, office buildings, combination store and offices, hotels, apartment buildings; the appraisal reports.

(Prerequisites, RE 1, RE 2, RE 11)

2½ semester hours credit

RETAILING

Retailing occupies one of the major steps in the important field of distribution. Rapid changes in retail merchandising practices create complex and difficult problems, making a knowledge of modern control methods necessary.

R 1 RETAIL BUYING

The buyer in relation to the merchandise organization, determining customer demands; sources of information and supply; buying plans; market representation and resident buying; meaning and computation of mark-up, discounts, cash terms, open-to-buy and typical department profit and loss statements.

2½ semester hours credit

R 2 RETAIL STORE MERCHANDISING

This course presents the fundamental principles of retail store merchandising, including purchase planning, pricing, markups and markdowns, merchandise inventories, turnover, merchandising policies, publicity budget and plans.

2½ semester hours credit

R 3 RETAIL STORE ADVERTISING

This course is devoted to the study of the elements of retail advertising. The various media used by retailers are considered with drill in the preparation of effective retail copy. A study is made of institutional, straight merchandise and sales copy as exemplified in current advertising of important retail concerns. The principles of layout receive attention as well as the mechanics of production, including art work plates, typography, and printing. The aim is to furnish a practical foundation fitting students for a creative career in retail advertising.

(Prerequisite, D 10)

2½ semester hours credit

R 4 MERCHANDISE DISPLAY FOR SALES PROMOTION

Display as a tool of sales promotion; the function and organization of the display department in the promotion of merchandise through interior and exterior displays; selection and preparation of merchandise for display; the use of display fixtures; creating display arrangements and determining most effective locations; store traffic; impulse buying; display problems of the small stores; seasonal backgrounds; color and illumination effects in window and case displays; planning and budgeting to co-ordinate with store merchandising and management policies.

2½ semester hours credit

R 5 RETAIL STORE MANAGEMENT

Development of modern retail organizations, including smaller and larger retail stores, store location and layout, wage payment methods, selling services, receiving and marking procedures, mail and telephone orders, adjustments, delivery of merchandise, retail accounting and control, and store protection and maintenance.

2½ semester hours credit

R 6 RETAIL CREDIT

Organization of the Credit Department; originating the charge account; passing on the applicant; the Retail Credit Bureau; mercantile agencies; credit procedures; accounts receivable procedures; collection procedure; installment credit; contracts; legal aspects of credit; bankruptcy.

2½ semester hours credit

SECRETARIAL

Today, more than ever, with the increased tempo of defense production, business and industry are looking toward qualified women to assume positions of administrative responsibility. The combination of proficiency in the secretarial sciences with training through specialized courses related to their fields of employment considerably enhances their value and provides the avenue for advancement into positions of major importance.

S 1 SHORTHAND I

Basic techniques of Gregg system with special emphasis on drills in the use of brief forms and abbreviations; spelling, punctuation, and letter practice including a large vocabulary of business terms. Transcription is introduced early in this course and rapid writing stressed through practice dictation material.

2½ semester hours credit

S 2 SHORTHAND II

Continuation of more advanced and difficult letters than those in beginning course, which will include dictation relating to specific fields in business and industry; constant check-ups on transcription speed; broader vocabulary development.

(Prerequisite, S 1 or equivalent)

2½ semester hours credit

S 3 TYPEWRITING I

Mechanical operations of the typewriter; mastering the keyboard; development of correct typewriting technique; proper stroking, rhythm, centering, tabulating; special finger and word exercises; speed tests and hints for developing both speed and accuracy in typewriting. As the semester progresses, elementary transcription will be introduced.

2½ semester hours credit

S 4 TYPEWRITING II

A continuation of S 3, with emphasis on developing typewriting speed; familiarization with carboning, stenciling, including mimeograph, hectograph, and multilith processes; advanced tabulation, rough draft and copy work; letter writing, and direct machine dictation, including audograph and ediphone. Each student is required to complete an outside typewritten project.

(Prerequisite, S 3 or its equivalent)

2½ semester hours credit

TRANSPORTATION AND TRAFFIC MANAGEMENT (T)

The rapid changes in several phases of the transportation industry are creating many entirely new concepts in the methods and economics of business operation. The transportation courses below are designed to present a practical approach to the basic principles and practices of current procedures and operations.

T 1 TRANSPORTATION PRACTICES

The importance of transportation in the American economy; a comparative evaluation of the various available transportation services from the point of view of cost, total time in transit, reliability and geographical coverage, including movement of freight by rail, motor, water and air carriers, freight forwarders, parcel post and express as well as combinations and modifications of each; classification of freight; rules of classification; basic studies in rates and tariffs.

2½ semester hours credit

T 3 TRAFFIC MANAGEMENT

The application of the principles of transportation and the principles of management to industrial activity. The traffic manager in the carrier organization; comparative advantages of different modes of transportation; selling the transportation service; government regulation and traffic management; use of tariffs; documentation; miscellaneous charges, rules and regulations. The industrial traffic manager, duties and qualifications; the industrial traffic management department; filing of claims, handling of freight; traffic management objectives.

(Prerequisite, T 1 or equivalent)

2½ semester hours credit

T 4 ADVANCED TRAFFIC MANAGEMENT PROBLEMS

This course applies the principles of transportation and the principles of traffic management to the solution of a series of actual and typical problems in industrial traffic management and carrier traffic management, and export and import procedure. The problems embody the application of the precepts of regulation and rate selection, as well as detailed analysis of comparative services and their costs.

(Prerequisites, T 1, T 3)

2½ semester hours credit

T 5-6 INTERSTATE COMMERCE COMMISSION PRACTICE AND PROCEDURE

A course designed to acquaint management levels in the transportation industry and in the industrial traffic departments of general industry with the responsibilities applicable to the regulation of transportation by the Federal Government; who must execute these responsibilities; the procedure by which they are carried out; history and content of Interstate Commerce Act and its impact upon all industrial activity; purpose and function of the Interstate Commerce Commission; training and preparation for the Interstate Commerce Commission Practitioners' Examination, including a study of important cases under the Commerce Clause of the Constitution; administrative law and procedure; ethics and general rules of practice.

(Prerequisite, T 1 or its equivalent)

5 semester hours credit

T 7-8 RATES AND TARIFFS

Technical treatment of tariff construction and use; structure of rates; the general rate level; procedure of filing; deviations from published tariffs and schedules; classification, exceptions, commodity rates, miscellaneous departures; changes in tariffs and classifications; the economic aspects of transportation rates.

(Prerequisites, T 1, T 5-6)

5 semester hours credit

T 11 MOTOR CARRIER OPERATIONS

Nature and characteristics of the motor carrier industry; types of motor carrier operations—common, contract, private as well as local and over the road; internal organization—administration and documentation, traffic management, terminal and garage operation; problems of revenue and cost, capital structure and economics; industrial relations; selection and financing of equipment; selling the motor carrier.

2½ semester hours credit

T 13-14 MOTOR CARRIER ACCOUNTING

Determination and allocation of revenue and cost in the motor carrier industry, including cost control for the benefit of management and cost allocation for regulatory purposes; capital structure and depreciation; office systems and procedure for the motor carrier; general record keeping for internal revenue as well as transportation regulation purposes, federal and state.

5 semester hours credit

T 15 FREIGHT CLAIMS FOR LOSS AND DAMAGE

This course presents the practical procedure as well as the legal basis for handling loss and damage claims, including the bill of lading as a contract, development of common carrier liability; duties of consequence and carrier with regard to acceptance of damaged freight; preparation, filing and prosecution of freight claims; statute of limitations; damages, usual and unusual, as well as direct and indirect.

(Prerequisites, T 1, T 3)

2½ semester hours credit

T 17 ADVANCED TRANSPORTATION ECONOMICS

This course looks beyond the mechanics of traffic management toward the more complete professionalization of the transportation executive, including the part played by transportation in the production process and the marketing process; transportation and the division of labor; the effect of transportation rates on prices and on the location of industry; carrier rate structure; the philosophy of public utility regulation; lawfulness and unlawfulness of carrier rates.

(Prerequisite, Ec 1-2)

2½ semester hours credit

BUSINESS READINGS

The two courses in Business Readings are designed to broaden the student's acquaintance with selective writings in the field of business and to introduce him to the real pleasure and values that come from such reading. There are no required lectures for these courses, each of which carries two and one-half semester hours credit and for which a charge of ten dollars is made.

Each of the Business Readings represents the equivalent of one hundred (100) hours devoted to reading and completion of the report. In general, one thousand (1000) pages of reading are represented in each report.

At the beginning of the Upper Middler and the Junior years, each degree candidate registers for a Readings course and is furnished a list of titles from which he makes selections for readings in accordance with the course requirements. Written reports are submitted on these readings, and are due on or before registering for classes the following year.

5 semester hours credit

THESIS**BACHELOR'S DEGREE THESIS**

Each candidate for the B.B.A. Degree may submit a thesis or the Business Readings reports. The conditions to be fulfilled in connection with a thesis are:

1. The selection of the subject, preparation of the outlines, and the collection of data must be worked out in accordance with the requirements of the Committee on Theses.
2. Two typewritten copies of the completed thesis must be presented to the Dean or the Director in the Divisions not later than March 15 of the year in which the candidate expects to graduate.
3. The thesis is expected to meet the equivalent of the work required in a full-year course. It is expected to give evidence that its writer has made a thorough study of the subject or problem selected, that he has marshaled the data in a businesslike manner, and has given evidence of his ability to reach sound and reasoned conclusions, and to present his findings in clear and convincing terms.

OCCUPATIONS (O)

The School considers that the knowledges, skills, and experiences acquired in the full-time employment of its students are the equivalent in many respects to the work carried on in a laboratory. For this reason all members of the three upper classes who expect to qualify for the Bachelor of Business Administration Degree must meet the occupational experience requirements listed below.

In order that this occupational experience may have the maximum educational value, the School maintains a Department of Vocational Guidance and Placement under the supervision of a competent Director. It is the responsibility of this Department to assist those students:

- a. Who need advice and guidance about employment in business;
- b. Who are unemployed and need placement service, and
- c. Who are already employed but need to change their present employment connections in order to obtain the greatest possible benefit from their training and experience.

There is no tuition charge for the occupational courses listed below, even though they are required for the degree. Furthermore, all services of the Department of Vocational Guidance and Placement are without charge to the student.

O 1-2 ELEMENTARY OCCUPATIONS

In this course students are required to meet with the Director of Vocational Guidance and Placement in groups or individually as he may direct, and to submit in the Upper Middler year a complete and detailed record of their employment for the college year. This report is one factor in evaluating the occupational experience credit of the student.

10 semester hours credit

O 3-4 INTERMEDIATE OCCUPATIONS

A continuation of O 1-2. Continuing guidance under the supervision of the Director of Vocational Guidance and Placement. Consideration of psychological and economic factors affecting vocations; vocational objectives. A complete report of the employment of the Junior year is required before the beginning of the Senior year.

10 semester hours credit

O 5-6 ADVANCED OCCUPATIONS

A critical consideration of the student's present employment in the light of present-day occupational trends. Individual conferences with a view to vocational adjustments, if deemed desirable. A complete report of the employment of the Senior year is required, which must be presented in person to the Director of Vocational Guidance and Placement by the middle of the final semester.

10 semester hours credit

School of Business

Administrative Policies

Requirements for Admission

All applicants whose credentials are approved by the Committee on Education, and who are admitted to degree or other programs, are classified as regular or conditioned students.

Regular Students

Applicants for admission as regular students must present evidence of the completion of an approved secondary school course, or the equivalent 15 units.*

Conditioned Students

Applicants who do not meet the requirements for admission as regular students may be admitted as conditioned students provided they present satisfactory evidence of ability to profit by the work of the School.

Conditioned students may remove their admission conditions and be re-classified as regular students by using *a*, *b*, *c*, or a combination of *a* and *b*.

- a. By applying courses which they have completed in the School of Business or in another approved college or university at the rate of one unit for each two and one-half semester hours. A course cannot be credited both for the removal of admission conditions and for the degree.
- b. By applying units for work completed in an approved secondary school, or for work certified by an accredited certifying agency.
- c. By action of the Committee on Education based upon all factors affecting the achievement and ability of the student in the School, when the student shall have completed the first thirty semester hours of work in his program; provided this work shall have been completed in not less than three years of attendance and with an average grade of not less than 70%. All conditioned students are required to take prescribed aptitude tests during the first year of attendance. These tests, for which no specific preparation can be made, are designed to test intellectual capacity and general fitness for college work rather than preparation in the specific subject matter of a secondary school program.

*A unit represents a year's work in any subject in any approved secondary school constituting approximately a quarter of a full year's work, or the equivalent. A four-year day high school course is regarded as representing at least 15 units of work, or 3 units in junior high school and 12 units in a three-year senior high school.

Registration

Before attending classes, students must report to the School Office for registration. Registrations will be accepted beginning July 1st for the following School year. Applicants are requested to register during the summer months to lessen the congestion during the opening week. No student will be allowed to register for any course after the second session without special permission from the Dean.

A schedule of classes may be obtained by applying at the School Office.

Advanced Standing

Advanced standing credit in the School may be obtained in one or both of two ways as follows:

By Transfer of Credit. Subject to the approval of the Committee on Education, credit may be given for work completed in other approved schools, colleges and universities. An applicant desiring credit by transfer should indicate his desire at the time of filing his application for admission. The applicant should instruct the Registrar of the institution of previous attendance to mail an official transcript direct to the School of Business indicating honorable dismissal, courses completed, credits and grades. A copy of the catalog of the institution from which the transfer is sought should accompany the application for admission.

By Examination. 1. For credit: No advanced standing credit is awarded except for work previously completed in courses comparable to those offered in the School of Business. Credit may be disallowed for work previously completed due to the remoteness of the time of study. These applicants, however, will be granted the privilege of taking an examination for credit.

2. For placement: Applicants having completed three years of book-keeping in high school may petition the privilege of taking an examination for placement. Satisfactory achievement will entitle them to register for Intermediate Accounting without, however, any advanced standing credit. Applicants who, as a result of previous training and experience, may be considered to possess sufficient knowledge of a subject will be allowed the privilege of taking a special examination in particular courses. No credit will be allowed but they will be granted the privilege of substituting another course.

The grade of 75% must be obtained in examinations for placement or for credit.

Residence Requirement

Every candidate for the B.B.A. or Associate Degree must fulfill the residence requirement. The residence requirement is defined as the taking and satisfactory completion in the School of Business immediately preceding graduation of 30 consecutive semester hours of work in courses plus the requirements in Business Readings and Occupational Experience; with the further provision that at least 10 of the 30 semester hours must be in the candidate's major field.

In the case of students who for causes beyond their control move outside of the reasonable commuting area of the School, and who have completed 75 or more semester hours of credit in courses, the Committee on Education will entertain a petition to allow them the privilege of completing their degree requirements at some other approved school. Under no circumstances will a degree be awarded to any student who has completed less than 30 semester hours of credit in courses in the School of Business.

Students attending certificate programs must complete in residence the full semester hour requirements of the programs in required courses or substitutions approved by the Dean.

Degree Requirements

The Degree of Bachelor of Business Administration is awarded with specification corresponding to the major field in which the student is studying. It can be completed by attending on a program of three evenings per week over a six-year period. This period, however, may be shortened by attendance during the Summer Sessions. The basic requirements are:

	<i>Semester Hours</i>
Required and Supporting Courses	90
Business Readings or Thesis	5
Occupational Experience	30
	<hr/>
Total Requirements for the Degree	125

The Associate Degree (with specification) requires a total of sixty (60) semester hours of credit selected from the *required* courses listed in the specific curriculum, and subject to approval of the Dean.

Graduation with Honors

Honors are based upon the excellence of the work performed by the students in the School. Three honorary distinctions are conferred upon properly qualified candidates for the bachelor's degree upon graduation:

Highest honors to those who have completed all work with an average of 95%.

High honors to those who have completed all work with an average of 90%.

Honors to those who have completed all work with an average of 85%.

These honors are subject to further conditions as follows:

To be entitled to honors a student must have completed a minimum of two full years of study in the School.

Courses credited by advanced standing whether by transfer or by examination will be eliminated in determining honors.

School of Business

General Information

Class Sessions

Classes are held each evening, Monday through Friday, and on Saturday morning. *The normal schedule for students pursuing a degree, title, or certificate program is three courses a week. Students may arrange their schedules so as to attend classes one, two, or three sessions a week depending upon the number of subjects taken.* Students interested in the schedule of classes should apply to the school office.

Attendance

The limited amount of time devoted to each subject and the rapid rate of progress in covering the essential content of a course make it highly desirable that students be present at every session. Because of the importance of regular attendance and its bearing upon the quality of scholarship, the policies governing attendance are:

Students who attend 75% or more sessions in a course are entitled to pass in that course if they attain a minimum final grade of D.

Students who attend between 60% and 74% of the sessions in a course are entitled to pass in that course if they attain a minimum final grade of C. Those who do not attain the minimum required grade of C may remove the condition only by means of a make-up examination in which they must receive a mark sufficient to raise the course grade to C.

Students who attend less than 60% of the sessions in a course will be considered ineligible to take the final examination or to receive any credit for the course.

Attendance credit is granted only when the student is in attendance at least three-quarters of the class period. Three separate absences of less than 30 minutes each constitute one complete absence unless such partial absences are canceled by satisfactory excuses.

Outside Preparation

It is expected that students will devote on the average two hours to preparation for each hour spent in the classroom. A student carrying a normal program of three courses a week will, therefore, be expected to devote to outside preparation an average of eleven to twelve hours a week. Some courses require more time for preparation than others.

Notify the Office Immediately

Of change of address.

Of withdrawal from any course — otherwise the fee for that course will be charged.

Of withdrawal from the School, giving date of the last session attended.

Term Tests

Two tests are regularly scheduled in each semester for all courses. These tests are regarded as part of the term or course work. Students failing to take the term tests for justifiable reasons may petition for a make-up privilege *within one week of the date of the test*. Make-up privilege will not be allowed to any student merely for the purpose of raising his test grade. A fee of \$3.00 is charged for each make-up test.

Regular Examinations

The general policies governing regular examinations are:

A final examination will be held at the end of each course unless an announcement to the contrary is made.

The minimum passing grade in a regular final examination is D.

Students who, for justifiable reasons, are unable to take a final examination may be allowed the privilege of a make-up examination upon petition to the Dean. This examination will be considered as the original examination for grading purposes.

The student who has received a passing mark in a final examination and in a course may not take another examination for the purpose of raising his grade unless he repeats the course in its entirety.

Condition Examinations

The following policies govern re-examinations:

Permission for taking a make-up examination is dependent upon the quality of the work which the student has done throughout the course and is a privilege which the Committee on Education may grant to students who have received an E grade or an incomplete (Inc.).

The condition or make-up examinations are given on specified dates. Students should consult the School Office for the specific dates of each examination.

Only one make-up examination in any given subject is allowed for the purpose of removing a conditional failure.

A make-up examination for purposes of removing a condition or an incomplete grade must be taken within the next School year. In such cases students may take either the examination at the condition examination period or the final examination when next given if within a period of one year. A fee of \$5 is charged for each School of Business examination taken out of course.

A minimum grade of 65% is required on each make-up examination unless a higher minimum is specified.

Whatever grade the student obtains on the make-up examination is credited as the final examination grade, but in no case can the final grade in the course be more than 70% except in the case of students who have been excused from taking the regular final examination.

Marks and Credits

The following system of grading is in use:

Superior Work, A; Above Average Work, B; Average Work, C; Lowest Passing Grade, D; Unsatisfactory Work, E; Failure, F; Incomplete, Inc.

Students receiving an E, or unsatisfactory work grade, in an examination or as a final grade in the course, may remove the unsatisfactory grade by taking a make-up examination when it is next given, or at the time of the conditional examinations in September. The minimum passing grade of 65% is required on the make-up examination, unless a higher minimum is designated. In no case will a student taking a make-up examination be allowed more than a C for a final grade even though a higher grade may be obtained.

Students receiving an F grade in a course must repeat the course in its entirety including term work, examinations, and attendance.

The policy is followed of mailing all grade and status reports to students instead of issuing these reports at the School Office or over the telephone.

A passing grade in a final examination as well as a passing final grade in the course is necessary in order to receive credit in the course.

Credit for one-half of a full-year course is not generally given, and in any event only upon approval by the Dean in advance of beginning the course.

In order to qualify for a degree, title or a certificate, the student must maintain a general average of C for the entire program. This is not interpreted to mean that each course must be passed with a grade of C, but that the average of all courses must be at least C. Grades of courses credited by transfer or by examination are not included in computing averages.

Probation and Discipline

The Committee on Education, in dealing with students whose work in the School may be unsatisfactory, or whose conduct is such as to make it inadvisable for them to continue as members of the student body, considers each case upon its individual merits. The following general principles are kept in mind in handling such cases:

Students whose scholarship in any given year is unsatisfactory may be dropped from the School or may be placed on probation with the privilege of spending a year in review.

When a student is placed on probation, the probation is formally imposed for a definite time and can only be extended by approval of the Committee on Education.

This Committee has the authority to dismiss from the School or place on probation at any time or to strike off from the list of candidates for the degree any student whom it may deem unworthy either on account of unsatisfactory scholarship or for any great defect of conduct or character. The Committee may ask any student to withdraw from the School who is obviously out of sympathy with the aims and ideals of the School.

Classrooms and Libraries

The classrooms are furnished with modern equipment and are thoroughly adapted to evening school work. Improvements in classroom facilities are constantly being made to meet the needs of the student body.

In connection with the General Library of the University in Boston a special section is devoted to books on business subjects. In addition, the leading trade and business magazines are available for student use. Additions are

constantly being made to the business section of the Library in recognition of the new demands for business education and research. The reading rooms of the Library are open Monday through Friday from 8:45 A.M. to 7:30 P.M. They close at 12:00 NOON on Saturdays and are not open Sundays and holidays.

All members of the School are entitled to the privilege of using the Boston Public Library including the Business Branch at 20 City Hall Avenue.

Textbooks and Supplies

The Northeastern University Bookstore is a department of the University and is operated for the convenience of the student body. All books and supplies which are required by the students for their work in the University may be purchased at the Bookstore situated in the basement of Richards Hall. In addition, the Bookstore also carries a large number of general supplies.

Student Council

The social and extracurricular life of the School is in charge of Student Councils consisting of representatives from each class or school group. In addition to arranging for occasional social affairs, special lectures, and meetings, the Council represents the interests of the student body. The faculty and the officials advise with the Council in regard to School policies.

Honor Fraternity

Sigma Epsilon Rho is the honor fraternity in the School of Business. Its purposes are:

To promote acquaintance and good fellowship among those men who have attained highest scholastic standing in the School.

To stimulate the student body to higher scholastic accomplishment through the bearing, influence, and work of these selected men.

To develop methods of mutual improvement and advancement among the members of this fraternity.

To support high moral, professional and scholastic ideals.

Only students with honor standing are admitted to the fraternity. Admission is by invitation, after nomination by the School faculty.

An outstanding business book is awarded each year by Sigma Epsilon Rho Fraternity to the highest ranking student for that year in each of the Sophomore, Lower Middler, Upper Middler, and Junior classes. Students will receive the award only in the event that they enroll for the subsequent year.

School of Business

Tuition, Fees and Scholarships

Tuition and fees are not transferable and are refundable only as stated under "Refund of Tuition."

Checks and drafts for all charges are to be drawn to the order of North-eastern University.

There are no auditors or auditor's rates in the School of Business.

Matriculation Fee

The University matriculation fee of \$5 must accompany the initial application for admission to the University. This fee is non-refundable.

Tuition

Tuition for all credit courses is charged at the rate of twelve dollars (\$12.00) per semester hour of credit. Charges for registration and tuition for special courses are at the rate and on the basis of payment specified for each course.

Tuition for degree or certificate candidates for all credit courses is charged on the semester basis payable at the beginning of each semester. As a convenience, however, and unless otherwise requested, the tuition each semester is payable in two (2) installments; the second installment is payable on November 15 and March 15 in the first and second semesters respectively.

Tuition for an unclassified student registered in a special course is charged for the entire course and is payable in a single payment at the beginning of the course unless otherwise arranged.

Occasionally situations develop — usually beyond the control of the student — which make it difficult to meet the payments in the manner outlined above. Under such circumstances the student is advised to discuss his problem personally with the Student Accounts Office where one of the budget plans or a deferred payment agreement may be worked out. Such arrangements should be made before the end of the first week of the semester or within one week of the date of registration if the student enters late. Failure to take immediate action will result in a late payment fee.

Tuition Budget Payment Plans

Schedule of Tuition Payments Calculated on a Full-Year Basis

	PLAN A <i>Three-Course Load</i>	PLAN B <i>Two-Course Load</i>	PLAN C <i>One-Course Load</i>
Payment Dates	Payments	Payments	Payments
Sept. 15	\$ 25	\$ 25	\$ 12.50
Oct. 15	20	12.50	7.50
Nov. 15	20	12.50	7.50
Dec. 15	20	12.50	7.50
Jan. 15	20	12.50	7.50
Feb. 15	20	12.50	7.50
Mar. 15	20	12.50	7.50
Apr. 15	20	12.50	7.50
May 15	20	12.50	—

Schedule of Tuition Payments Calculated on a Semester Basis

		PLAN D	PLAN E	
Payment Dates		Payments	Payments	
1st Sem.	2nd Sem.			
Sept. 15	Feb. 1	\$ 33	\$ 18	Regular Payment Plan
Oct. 15	Mar. 1	20	15	
Nov. 15	Apr. 1	20	15	
Dec. 15	May 1	20	15	

Tuition Underwritten by Employers

An increasing number of companies are underwriting in part or whole the cost of tuition of students in their employ. In such cases the student must furnish at the time of registration, or immediately thereafter, a purchase order covering his registration or a statement from an officer of his company certifying that the company is underwriting the tuition.

Late Payment Fee

Bills for tuition and fees are payable on or before Saturday of the week of issuance. A Late Payment Fee of \$2 is charged for all students failing to comply unless special payment arrangements are approved by the Student Accounts office.

Courses in Other Departments of the University

School of Business students assigned to courses in other departments of the University are charged the tuition rates and other fees effective in the departments to which they are assigned.

Late Registration

Students are urged to register well in advance of the opening of the semester, since any student who registers after the first week of classes of the School term is charged a Late Registration Fee of \$5.00.

General Fees

A fee of \$3 is charged for each make-up test, \$5 for each conditional examination or advanced standing examination. This fee must be paid on or before the date of the examination.

A fee of \$10 is charged for each of the Business Readings courses. Payment is due upon approval of selected readings. This fee applies only to those who elect to submit Business Readings in lieu of a thesis, and is payable ordinarily during the Upper Middler and Junior years.

A thesis fee of \$20 is required of all degree candidates who elect to write theses. This fee is payable upon presentation of the thesis which is due not later than March 15 of the year in which the student expects to receive the degree.

The University graduation fee, charged to those who are candidates for the Bachelor or Associate degree is \$15, payable on or before May 1st of the year in which the student expects to graduate.

Expense for Books and Materials

Students purchase their own textbooks and working materials. The cost varies according to the subjects for which the student is enrolled. The average cost for a normal program of three subjects is about \$15, with a maximum of approximately \$25. The textbooks for single courses range from \$3 to \$6.

General Financial Information

Checks should be drawn payable to Northeastern University.

Students are not permitted to attend class sessions or take any examinations or tests until they have paid their tuition fees or have made satisfactory arrangements for payments.

Students will not be advanced in class standing, or permitted to re-enroll in the University, nor will degrees be conferred until all financial obligations to the University have been met.

No certificate of honorable dismissal will be issued to any student who has not fully met his financial obligations to the University.

Refund of Tuition

Requests for refunds must be made at the time of filing the Application for Withdrawal at the School Office. If the withdrawal notification is sent in by mail, the refund should be requested in the letter with reasons which necessitate the withdrawal. *No refunds will be granted to a student who voluntarily withdraws* or who has attended more than five weeks of the term for which payment has been made.

Refunds of tuition will be considered only in the following instances:

1. If, because of illness, a student is compelled to withdraw before the fifth week of the term, or
2. If a student who is regularly employed is sent out of town permanently by his employer, or
3. If the hours of employment of a student who is regularly employed are changed so as to make it impossible for him to continue in attendance, or
4. If a student is inducted into military service.

The Committee on Withdrawals will consider requests for tuition refunds only on the following bases:

1. That the application for withdrawal be made immediately after the student ceases attendance.
2. The request for refund is accompanied by an *acceptable* physician's certificate in the instance of illness, or by an *acceptable* employer's certification in the instance of a change in place or hours of employment.
3. Evidence of induction into military service.

For cases complying with the above, partial refunds on tuition for the semester may be allowed according to the following schedule:

<i>Petition for Withdrawal Filed Within</i>	<i>Refund to Student on</i>	
	<i>Regular Term</i>	<i>Summer Term</i>
One Week	80 per cent	80 per cent
Two Weeks	80 per cent	60 per cent
Three Weeks	60 per cent	40 per cent
Four Weeks	40 per cent	20 per cent
Five Weeks	20 per cent	0 per cent
After Five Weeks	0 per cent	0 per cent

The above does not include fixed or non-refundable fees or laboratory fees for which there is no refund allowed.

The official "Application for Withdrawal" form may be obtained in the School Office. All refunds are made through the Student Accounts Office of the University. The refund procedure in such cases takes from three to four weeks. A check is mailed direct to the student for any refund to which he is entitled.

Scholarships, Awards, and Loan Funds

The following scholarships and awards are available to students enrolled for a normal schedule of fifteen or more semester hours of class work who are pursuing a degree or title program in the School of Business in Boston. One-fourth of the scholarship is applied to the tuition of the recipient at each quarterly payment.

SCHOOL OF BUSINESS HONOR AWARDS

A half tuition scholarship award is made each year to the highest ranking student of that year in the Junior, Upper Middler, Lower Middler, Sophomore and Freshman classes who re-enrolls the following year for a normal schedule of study.

A quarter tuition scholarship award is made each year to the second highest ranking student of that year in the Junior, Upper Middler, Lower Middler, Sophomore and Freshman classes who re-enrolls the following year for a normal schedule of study.

To be eligible for either a half or a quarter tuition honor award, a student entering the School with advanced standing credit, except by examination, must have completed at least thirty semester hours of classroom work at the time the award is made.

THE CLARKSON-ALUMNI SCHOLARSHIP

This scholarship, made available through the generosity of the Alumni Association of the School of Business, is in memory of George S. Clarkson, a member of the Class of 1914 and an instructor in Accounting for many years. This scholarship, which is indeterminate in amount, is granted to the student who obtains the highest cumulative average in one of the Accounting curricula at the close of his Junior year. To be eligible, the student must have completed thirty semester hours of credit in residence in Accounting courses. If he is eligible for an award of greater monetary value, the Clarkson-Alumni award will be made to the next highest ranking student who is eligible. To be eligible for this scholarship the student must pursue a normal schedule the following year.

DEAN RUSSELL WHITNEY MEMORIAL SCHOLARSHIP

Alpha Chapter of the Pi Tau Kappa Fraternity sponsors an annual tuition scholarship in memory of former Dean Russell Whitney. The award consists of a half tuition made available to the man in the Junior Class of the School of Business whose qualities of leadership and influence among his fellow students, whose strength of character, whose record of scholarship and broad achievement mark him as outstanding. The award is made available to the student in his Senior year. To be eligible for this scholarship the student must pursue a normal schedule during his Senior year.

KAPPA TAU PHI SCHOLARSHIP

This scholarship award of one quarter tuition is made available by the Kappa Tau Phi Sorority. It is granted annually to the woman student who ranks highest in her class at the end of the Sophomore year unless she is eligible for an award of greater monetary value, in which event the award will be made to the highest ranking woman student who is not eligible for such an award. To be eligible for this scholarship the student must pursue a normal schedule the following year. In determining this award grades of all courses completed in the Freshman and Sophomore years shall be considered.

ALUMNI LOAN FUND

The Alumni Association of the School of Business in Boston has provided a loan fund which is available to students in the Senior and Junior classes in Boston who are in need of financial assistance in order to continue their studies. Applications for loans should be addressed to the Dean of the School. All applications must be approved by the Alumni Loan Fund Committee.

SCHOOL OF BUSINESS LOAN FUND

By vote of the Student Council a part of the Student Activities fees for 1937-1938 was set aside to provide a loan fund which is available to students temporarily in need of small loans for tuition or other School charges. Students needing assistance from this fund should confer with the Dean who administers it.

Application
Received by _____

Date _____

Northeastern University
SCHOOL OF BUSINESS
360 HUNTINGTON AVENUE, BOSTON 15, MASS.

A fee of five dollars must accompany this application. Make checks, money orders, or drafts payable to Northeastern University. **This fee is not refundable.** This fee is included under the educational benefits of the G. I. Bill of Rights.

APPLICATION FOR ADMISSION

Date.....

Mr.
Mrs.
I (Print name in full) Miss.....

(First).....(Middle).....(Last)

hereby apply for admission to the School of Business, for the program designated.

- | | |
|--|--|
| <input type="checkbox"/> Commercial or Industrial Accounting Associate | <input type="checkbox"/> In Accounting |
| <input type="checkbox"/> Public Accounting (C.P.A.) | <input type="checkbox"/> In Management |
| <input type="checkbox"/> Cost Accounting | <input type="checkbox"/> Certificate |
| <input type="checkbox"/> Business Management | <input type="checkbox"/> Credit & Financial Management Institute |
| <input type="checkbox"/> Credit and Financial Management | <input type="checkbox"/> Institute for Business & Professional Secretaries |
| <input type="checkbox"/> Industrial Management | <input type="checkbox"/> Institute of Insurance |
| <input type="checkbox"/> Insurance | <input type="checkbox"/> Institute of Municipal Management |
| <input type="checkbox"/> Law and Business | <input type="checkbox"/> Institute of Retailing |
| <input type="checkbox"/> Marketing | <input type="checkbox"/> Institute of Traffic Management |
| <input type="checkbox"/> Office Management | <input type="checkbox"/> Labor Relations Institute |
| <input type="checkbox"/> Personnel and Industrial Relations | <input type="checkbox"/> Office Management Institute |
| <input type="checkbox"/> Production Management | <input type="checkbox"/> Production Management Institute |
| <input type="checkbox"/> Real Estate | <input type="checkbox"/> Quality Control Institute |
| <input type="checkbox"/> Transportation and Traffic Management | <input type="checkbox"/> Real Estate Institute |
| <input type="checkbox"/> In Engineering and Management | <input type="checkbox"/> World Trade Institute |

☐ Single Courses only: (List each course).....

Mail address: Street.....City.....State.....

Home address: Street.....City.....State.....

Date of birth.....Age.....yrs.....mos.
 Are you to take these courses under the G. I. Bill of Rights? ☐ Yes ☐ Single ☐ No ☐ Married
 Name and address of parent or guardian if under 21 years of age.....

I have attended, including other schools of the Northeastern University system, the following schools above grammar grade. List all junior and senior high schools, evening high schools, preparatory schools, colleges and universities (if attendance at a university, *designate school*).

NAME OF SCHOOL	LOCATION — CITY, STATE				Check Years Attended				Date Left	Date of Graduation	Degree if any
	1	2	3	4	1	2	3	4			

I request advanced standing credit for previous college work completed at (name of institution).....

For information relative to my character and general ability, I refer you to the following person who is not a student or relative:

Name.....Street.....
 City.....State.....Occupation.....

I first learned of Northeastern University through.....

Following is the name and address of the person who recommended that I enter the School of Business.....

I am employed as indicated below.

Name and Address of Employer

My Position

(OVER)

(My Usual Signature)

All applicants for admission to the School of Business are required to furnish the information requested below. This information is desired in order that the school officers and counsellors may be more helpful to students in planning their programs and in achieving their vocational objectives.

1. In what types of work have you been occupied since leaving school?

2. Describe in *detail* your duties in your present position.

3. For what specific position or vocation do you expect your studies to prepare you?

4. Add such other information as may be helpful and valuable in considering your application for admission.

DO NOT WRITE BELOW THIS LINE

Approved for admission as a regular, degree title student with..... units credited and with..... units conditioned, certificate unclassified

..... Dean Date.....

NORTHEASTERN UNIVERSITY

COEDUCATIONAL

COLLEGE OF LIBERAL ARTS

Offers a broad program of college subjects serving as a foundation for the understanding of modern culture, social relations, and technical achievement. Varied opportunities available for vocational specialization. Degree: Bachelor of Science or Bachelor of Arts.

COLLEGE OF ENGINEERING

Offers curricula in Civil, Mechanical (with Industrial and Aeronautical options), Electrical, and Chemical Engineering. Classroom study is supplemented by experiment and research in well-equipped laboratories. Degree: Bachelor of Science in the professional field of specialization.

COLLEGE OF BUSINESS ADMINISTRATION

Offers curricula in Accounting, Industrial Relations, Marketing and Advertising, Finance and Insurance, and Business Management. Each curriculum represents in itself a broad survey of business technique, differing from the others chiefly in emphasis. Degree: Bachelor of Science in Business Administration.

SCHOOL OF LAW

Offers day and evening undergraduate programs admitting those who present a minimum of one-half of the work accepted for a bachelor's degree in an approved college or its full equivalent, each program leading to the degree of Bachelor of Laws, and a graduate program leading to the degree of Master of Laws.

SCHOOL OF BUSINESS

Offers curricula through evening classes leading to the degree of Bachelor of Business Administration with appropriate specification in Accounting, Management, and Engineering and Business. Certificate programs in the Labor Relations Institute, the Institute of Retailing, Institute of Insurance, Institute of Traffic Management and the Office Management Institute. Preparation for C.P.A. examinations. Intensive programs arranged to meet special needs.

EVENING COURSES OF THE COLLEGE OF LIBERAL ARTS

Certain courses of the College of Liberal Arts are offered during evening hours in the fields of Biology, Chemistry, Economics, English, History, Government, Psychology and Sociology. A special program preparing for admission to the School of Law is also available. The program is equivalent in hours to one-half the requirement for the A.B. or S.B. degree. Special courses also available. Degree of Associate in Arts conferred.

The Graduate Division offers courses leading to the degree of Master of Business Administration.

The Colleges of Liberal Arts, Engineering, and Business Administration offer day programs and are conducted on the Co-operative Plan. After the Freshman year students may alternate their periods of study with periods of work in the employ of business or industrial concerns. Under this plan they gain valuable experience and earn a large part of their college expenses. Full-time curricula are available for students who do not desire the Co-operative Plan.

In addition to the above schools the University has affiliated with it and conducts the Lincoln Technical Institute offering, through evening classes, courses of college grade in various fields of engineering leading to the degree of Associate in Engineering; and the Lincoln Preparatory School, an accredited evening school preparing for college entrance and offering other standard high school programs.

For further information regarding any of the above schools, address

NORTHEASTERN UNIVERSITY

360 Huntington Avenue

BOSTON 15, MASS.

Telephone: COpley 7-6600

**NORTHEASTERN
UNIVERSITY**

College of Liberal Arts

BULLETIN OF EVENING COURSES



BOSTON 15, MASSACHUSETTS

OFFICE HOURS

JUNE 15 — AUGUST 15

Monday through Thursday 8:45 A.M.—9:00 P.M.

Friday 8:45 A.M.—5:00 P.M.

AUGUST 15 — JUNE 15

Monday through Friday 8:45 A.M.—9:00 P.M.

Saturday 8:45 A.M.—12.00 NOON

The office is closed on all legal holidays.

INTERVIEWS

Prospective students, or those desiring advice or guidance regarding any part of the school work or curricula, are encouraged to arrange for personal interviews with the Dean or other officers of instruction. Career planning through competent guidance provides an understanding of professional requirements and develops that definiteness of purpose so vital to success.

GIFTS AND BEQUESTS

Northeastern University will welcome gifts and bequests for the following purposes:

- (a) For its building program.
- (b) For general endowment.
- (c) For specific purposes which may especially appeal to the donor.

It is suggested that, when possible, those contemplating gifts or bequests confer with the President of the University regarding the University's needs before legal papers are drawn.

Gifts and bequests should be made only in the University's legal name, which is "Northeastern University."

For further information or an interview

ADDRESS

Director of Evening Courses

NORTHEASTERN UNIVERSITY

COLLEGE OF LIBERAL ARTS

360 Huntington Avenue, Boston 15, Mass.

Telephone: COpley 7-6600

NORTHEASTERN UNIVERSITY

College of Liberal Arts

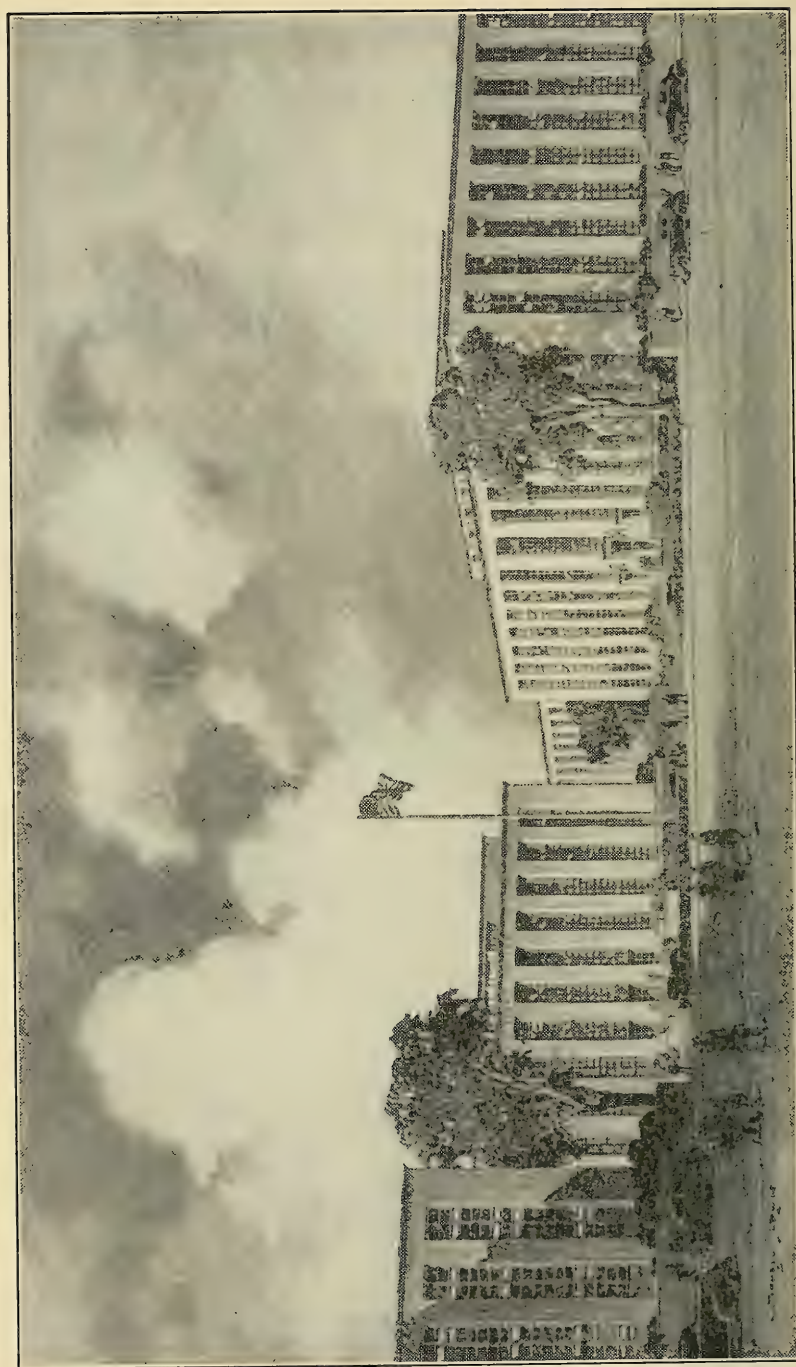
BULLETIN OF EVENING COURSES

COEDUCATIONAL



The University is located at the entrance to the Huntington Avenue subway within nine minutes of Park Street and easily accessible from all points.





CONTENTS

	<i>Page</i>
CALENDAR.....	4

NORTHEASTERN UNIVERSITY

THE NORTHEASTERN UNIVERSITY CORPORATION.....	5
GENERAL UNIVERSITY COMMITTEES.....	6
OFFICERS OF ADMINISTRATION.....	7
STAFF OF INSTRUCTION.....	7

COLLEGE OF LIBERAL ARTS

Evening Courses

GENERAL STATEMENT.....	8-10
LOCATION.....	10-11
STATEMENT OF PURPOSE.....	12
ASSOCIATE IN ARTS PROGRAM.....	13
REQUIREMENTS FOR A.B. OR S.B. DEGREE.....	13
COMBINED LIBERAL ARTS AND BUSINESS.....	14
ASSOCIATE IN SOCIAL SCIENCES PROGRAM.....	18
FAMILY INSTITUTE.....	19
INSTITUTE OF NATIONS.....	20
LABOR RELATIONS INSTITUTE.....	21
GENERAL INFORMATION.....	22
Application for Admission.....	22
ADMISSION REQUIREMENTS.....	22
Registration.....	22
Attendance and Examinations.....	23
Grades.....	23
Honor List.....	23
Graduation with Honor.....	23
Scholarships.....	23
TUITION AND OTHER FEES.....	24-26
DESCRIPTION OF COURSES.....	27-45

COLLEGE OF LIBERAL ARTS

Evening Courses

CALENDAR

REGISTRATION	July 15–September 10
MAKE-UP EXAMINATIONS	First Week in September
FIRST SEMESTER BEGINS	Friday after Labor Day
CHRISTMAS RECESS	Christmas Week through New Year's Day
FINAL EXAMINATIONS—First Semester	Last week in January
SECOND SEMESTER BEGINS	First week in February
MAKE-UP EXAMINATIONS	Second week in March
FINAL EXAMINATIONS	Second week in June
COMMENCEMENT EXERCISES	To be announced

Class sessions will be omitted on all legal holidays.

THE NORTHEASTERN UNIVERSITY CORPORATION

ROBERT GRAY DODGE, *Chairman*

FRANK LINCOLN RICHARDSON, *Vice-Chairman*

CARL STEPHENS ELL, *President of the University*

ROBERT GREENOUGH EMERSON, *Treasurer*

EVERETT AVERY CHURCHILL, *Secretary*

JOSEPH FLORENCE ABBOTT
CHARLES FRANCIS ADAMS
O. KELLEY ANDERSON
HENRY NATHANIEL ANDREWS
FREDERICK AYER
ARTHUR ATWOOD BALLANTINE
GEORGE LOUIS BARNES
THOMAS PRINCE BEAL
FARWELL GREGG BEMIS
SAMUEL BRUCE BLACK
JOHN S. BOTTOMLY
RICHARD L. BOWDITCH
GEORGE R. BROWN
GEORGE AUGUSTUS BURNHAM
GODFREY LOWELL CABOT
ELMER T. CARLSON
WALTER CHANNING
WILLIAM CONVERSE CHICK
ROBERT B. CHOATE
PAUL FOSTER CLARK
GEORGE HENRY CLIFFORD
ALBERT MORTON CREIGHTON
ROBERT CUTLER
MARSHALL BERTRAND DALTON
EDWARD DANA
EDWARD DANE
RALPH MEAD DARRIN
CARL P. DENNETT
FREDERICK JOSEPH DILLON
DAVID FRANK EDWARDS
WILLIAM PARTRIDGE ELLISON
WALLACE FALVEY
JOHN WELLS FARLEY
JOSEPH FABIAN FORD
NOBLE FOSS
ERNEST BIGELOW FREEMAN
JOHN LIVINGSTONE GRANDIN, JR.
MERRILL GRISWOLD
H. FREDERICK HAGEMANN, JR.
GEORGE HANSEN
CHRISTIAN ARCHIBALD HERTER
CHARLES EDWARD HODGES
HAROLD DANIEL HODGKINSON
HARVEY P. HOOD
CHANDLER HOVEY
HOWARD MUNSON HUBBARD
MAYNARD HUTCHINSON
RAY E. JOHNS
CHARLES BERKLEY JOHNSON
JACOB JOSEPH KAPLAN
MICHAEL T. KELLEHER
HARRY HAMILTON KERR

EDWARD ATKINS LARNER
JOHN ENDICOTT LAWRENCE
GALEN DAVID LIGHT
RALPH LOWELL
WILLARD BLACKINTON LUTHER
EDWARD ABBOTT MACMASTER
HAROLD FRANCIS MASON
JAMES FRANKLIN McELWAIN
HUGH DEAN McLELLAN
EDWARD R. MITTON
IRWIN LIKELY MOORE
IRA MOSHER
IRVING EDWIN MOULTROP
GEORGE S. MUMFORD, JR.
EDWARD ABRAHAM NATHANSON
HARLAN P. NEWTON
JOHN THOMAS NOONAN
GEORGE OLMSTED, JR.
AUGUSTIN HAMILTON PARKER, JR.
THEODORE R. PEARY
EDWARD DANA PHINNEY
FREDERICK SANFORD PRATT
ROGER PRESTON
STUART CRAIG RAND
WILLIAM McNEAR RAND
NEAL RANTOUL
JAMES LORIN RICHARDS
JAMES C. RICHDALE
HAROLD BOURS RICHMOND
CHARLES FOREST RITTENHOUSE
LEVERETT SALTONSTALL
RUSSELL MARYLAND SANDERS
RALPH T. SAYLES
ANDREW SEBASTIAN SEILER
GIFFORD KINGSBURY SIMONDS, JR.
JOSEPH P. SPANG, JR.
FRANK PALMER SPEARE
F. R. CARNEGIE STEELE
CHARLES STETSON
ABBOT STEVENS
EARL PLACE STEVENSON
ROBERT GREGG STONE
ROBERT T. P. STORER
FRANK HORACE STUART
RALPH EMERSON THOMPSON
ELIOT WADSWORTH
SAMUEL WAKEMAN
EUSTIS WALCOTT
HAROLD JOHN WALTER
EDWIN SIBLEY WEBSTER, JR.
EDWARD AUGUSTUS WEEKS, JR.
SINCLAIR WEEKS

GENERAL UNIVERSITY COMMITTEES

EXECUTIVE COUNCIL

CARL STEPHENS ELL, *Chairman*

EVERETT AVERY CHURCHILL

MILTON JOHN SCHLAGENHAUF

ALBERT ELLSWORTH EVERETT

WILLIAM CROMBIE WHITE

UNIVERSITY CABINET

CARL STEPHENS ELL, *Chairman*

WILLIAM THURLOW ALEXANDER

HAROLD WESLEY MELVIN

EVERETT AVERY CHURCHILL

RUDOLPH MAGNUS MORRIS

ALBERT ELLSWORTH EVERETT

LOWELL STARBUCK NICHOLSON

GEORGE RAYMOND FENNELL

WINTHROP ELIOT NIGHTINGALE

ROGER STANTON HAMILTON

RUDOLF OSCAR OBERG

CHARLES WILLIAM HAVICE

EDWARD SNOW PARSONS

FREDERICK ROBERT HENDERSON

MILTON JOHN SCHLAGENHAUF

WILFRED STANLEY LAKE

J. KENNETH STEVENSON

DONALD HERSHEY MACKENZIE

WILLIAM CROMBIE WHITE

GEORGE ARTHUR MALLION

WILLIAM GREENE WILKINSON

LIBRARY COMMITTEE

EVERETT AVERY CHURCHILL, *Chairman*

WILLIAM THURLOW ALEXANDER

WILFRED STANLEY LAKE

ALBERT ELLSWORTH EVERETT

MYRA WHITE

ROGER STANTON HAMILTON

WILLIAM CROMBIE WHITE

COLLEGE OF LIBERAL ARTS

Evening Courses

OFFICERS OF ADMINISTRATION

CARL STEPHENS ELL, A.B., M.S., Ed.M., Sc.D., *President of the University*

FRANK PALMER SPEARE, M.H., LL.D., *President Emeritus*

EVERETT AVERY CHURCHILL, A.B., Ed.D., *Vice-President of the University*

ALBERT ELLSWORTH EVERETT, B.S., M.B.A., *Director of Evening Division*

WILFRED STANLEY LAKE, A.B., M.A., Ph.D., *Dean*

MILTON JOHN SCHLAGENHAUF, A.B., B.D., M.A., *Director of Admissions*

STAFF OF INSTRUCTION

R. LAWRENCE CAPON, B.S. in Ed., A.M., *American Literature*

A. ARTHUR CAPONE, S.B., A.M., Ed.M., LL.B., *Sociology, Criminology*

ELISHA B. CHRAKIAN, A.B., M.A., *Philosophy, Social Ethics, Logic*

ELMER H. CUTTS, A.B., M.A., Ph.D., *Chairman Department of History*

LESTER DEARBORN, B.S. in S.Sc., *Psychology*

FREDERICK W. HALL, A.B., *Juvenile Delinquency*

ROGER S. HAMILTON, A.B., M.A., Ph.D., *Chairman Department of Economics*

CHARLES W. HAVICE, A.B., M.A., S.T.B., Ph.D., *Chairman Department of Sociology*

THOMAS C. HEFFERNAN, A.B., A.M., LL.B., *English*

FREDERICK W. HOLMES, A.B., M.A., *Chairman Department of English*

JOHN H. JUDGE, B.B.A., Ed.M., *Director Family Institute, Sociology, Psychology*

REGINALD G. LACOUNT, S.B., M.A., Ph.D., *Chairman Department of Physics*

THOMAS S. LESTER, A.B., *English Literature*

JOHN P. MALLAN, B.S., M.A., *Soviet Union Political Theory*

FRANCIS W. MCCARTHY, Ph.B., S.M., Ph.D., *Survey of Physical Sciences*

JOSEPH L. MCNAMARA, A.B., A.M., *Philosophy*

AUGUST C. MILLER, JR., B.S., A.M., *Comparative Government*

THOMAS A. O'KEEFFE, A.B., A.M., Ed.M., *English*

RICHARD D. PIERCE, A.B., B.D., S.T.M., S.B., Ph.D., *Constitutional History*

JOSEPH SKINNER, A.B., Ph.D., *History*

ARTHUR B. WARREN, A.B., M.A., Ph.D., *Chairman Department of Psychology*

ALAN F. WESTIN, B.A., LL.B., *Constitutional History, American Foreign Policy*

DANIEL WILLARD, B.S., *Economics*

GENERAL STATEMENT

NORTHEASTERN UNIVERSITY is incorporated as a philanthropic institution under the General Laws of Massachusetts. The State Legislature, by special enactment, has given the University general degree granting powers.

The Corporation of Northeastern University consists of men who occupy responsible positions in business and the professions. This Corporation elects from its membership a Board of Trustees in whom the control of the institution is vested. The Board of Trustees has four standing committees: (a) an Executive Committee which serves as an Ad Interim Committee between the regular meetings of the Board of Trustees and has general supervision of the financial and educational policies of the University; (b) a Committee on Buildings which has general supervision over the building needs of the University; (c) a Committee on Funds and Investments which has the responsibility of administering the funds of the University; (d) a Development Committee which is concerned with furthering the development plans of the University.

Founded in 1898, Northeastern University, from the outset, had as its dominant purpose the discovery of human and social needs and the meeting of these needs in distinctive and highly serviceable ways. While subscribing to the most progressive educational thought and practice, the University has not duplicated the programs of other institutions but has sought "to bring education more directly into the service of human needs."

With respect to program, Northeastern has limited itself:

- To offering, in its several schools, basic curricula from which non-essentials have been eliminated;
- To effective teaching;
- To advising and guiding students;
- To giving students the chance to build well-rounded personalities through a balanced program of extracurricular activities.

The Northeastern Plan of Education is especially designed for the student who must earn while he learns. In the main, it consists of two definite types of education:

- Co-operative Education by Day,
- Adult Education by Night.

The plan has been developed in such a way that experience in jobs with pay is utilized to help students of limited financial resources secure an education and at the same time gain the maximum educational benefit from their practical experience. So far as the New England States are concerned, Northeastern University is the only institution whose day

colleges, other than the School of Law, are conducted under the Co-operative Plan.

The several schools and programs of the University are conducted either under the name "Northeastern University" or by its affiliated schools, The Lincoln Schools and The Huntington Day School for Boys. The following is a brief outline of the principal types of educational opportunities offered:

1. In the field of Co-operative Education there are three day colleges — the College of Liberal Arts, the College of Engineering, and the College of Business Administration. The College of Liberal Arts offers majors in the usual fields of the arts and the sciences leading to the degrees of Bachelor of Arts and Bachelor of Science. The College of Engineering, one of the largest engineering colleges in the United States, has curricula in Civil, Mechanical (with Industrial and Aeronautical options), Electrical, and Chemical Engineering. The College of Business Administration has curricula in Accounting, Marketing and Advertising, and Industrial Administration. The College of Engineering and the College of Business Administration confer the degree of Bachelor of Science with specification indicating the field of specialization. The Co-operative Plan under which all of these day colleges operate enables the student to alternate regular periods of classroom instruction with supervised employment in an industrial or commercial position, thus combining theory and practice in an exceedingly effective manner. Apart from the educational advantages of the Co-operative Plan is the opportunity for self-support while the student is pursuing his studies at Northeastern University. During the co-operative periods, students not only gain experience but are also paid for their services. Approximately three hundred business and industrial concerns co-operate with Northeastern University in making this program effective.
2. The School of Law conducts both a day and an evening undergraduate program which leads to the degree of Bachelor of Laws, and a graduate program leading to the degree of Master of Laws.
3. The Adult Education Program has been developed in the evening work of the School of Law as indicated above, in the School of Business, and in the evening courses of the College of Liberal Arts. The School of Business has curricula in Management, Accounting, and Engineering and Business. This School awards the Bachelor of Business Administration degree with specification. A division of the School of Business is also conducted in Springfield with curricula in Accounting, Management, and Engineering and Business, leading to the Bachelor of Business Administration degree. The College of Liberal Arts offers certain of its courses during evening hours constituting a program, three years in length, equivalent in hours to one-half the requirements for the A.B.

or S.B. degree and providing a general education and preparation for admission to the School of Law. The degree of Associate in Arts is conferred upon those who complete this program.

4. The Adult Education Program has also been developed through the Lincoln Schools, which are affiliated with and conducted by Northeastern University. The classes in these schools are held at convenient evening hours. The Lincoln Technical Institute offers curricula upon a college level in various phases of engineering leading to the degree of Associate in Engineering; whereas the Lincoln Preparatory School, recognized by the leading New England Colleges, prepares students for admission to college and offers other standard high school programs.
5. The Huntington Day School for Boys, also affiliated with and conducted by Northeastern University, is the outgrowth of a demand in the city of Boston for an urban preparatory school with high educational standards which would furnish thorough preparation for admission to the leading colleges and universities. While easily accessible to the various sections of Boston and to the suburbs, it has the facilities of a country day school and offers a country day school program. This School is one of the leading preparatory schools of the country.

LOCATION OF UNIVERSITY BUILDINGS

Northeastern University is located in Boston, a city which is rich in educational and cultural opportunities. The University center is on Huntington Avenue just beyond Massachusetts Avenue at the entrance to the Huntington Avenue Subway. Here on an eight-acre campus are located the educational buildings of the University except that of the School of Law. Evening classes for the College of Liberal Arts are held at the University center on Huntington Avenue.

Richards Hall

Richards Hall at 360 Huntington Avenue contains over one hundred thousand square feet of floor space devoted to administrative and instructional purposes. On the first floor are the general administrative offices of the University. The University bookstore, the "Husky Hut" and the student checkroom are located on the ground floor. There are three large lecture halls and numerous classrooms and laboratories. The office of the Director of the evening courses of the College of Liberal Arts is located on the first floor of this building.

Student Center Building

The Student Center Building contains administrative offices, facilities for student activities, reading and study rooms, lounges, some classrooms and an auditorium seating 1,300 for student convocations.

East Building

This building contains the general University library, classrooms, and certain laboratories.

Library Building

This structure, completed in 1952, is a companion building to Richards Hall, consists of five floors, and contains about 85,000 square feet of floor area. The lower two and one-half floors will be used for the University Library. It provides five reading rooms seating over 600 students and stack capacity for about 170,000 volumes in addition to the special facilities of a modern university library. A well-equipped listening room, a browsing library, smoking rooms, and a microfilm room are included among these facilities. The upper two and one-half floors house the Department of Drawing and the Departments of English and Modern Languages and will provide a number of classrooms and drawing rooms.

Science Hall

This building contains forty-two thousand square feet of floor space. Here are located the Chemical Engineering and Biological laboratories, classrooms and lecture halls.

Botolph Building

The Botolph Building of the University contains certain laboratories, a large lecture hall, and several classrooms.

Beacon Hill Building

The Beacon Hill Building, located at 47 Mt. Vernon Street, within a few minutes' walk of the State House, and occupied exclusively by the Law School, contains administrative offices, a library, classrooms, student lounges, and other facilities.

TRANSPORTATION

The University center is easily reached from the various railroad stations and from all points on the Metropolitan Transit Authority. The new Huntington Avenue Subway comes to the surface at the University center. Ample parking space is available for the use of students coming by automobile.

THE COLLEGE OF LIBERAL ARTS

Evening Courses

STATEMENT OF PURPOSE

The College of Liberal Arts through its evening courses offers a program in general education and a special pre-legal program preparing for admission to Northeastern University School of Law.

By conducting its classes at convenient evening hours, it gives high school graduates who are obliged to seek work immediately upon graduation an opportunity to continue their education. In general those who seek admission to the evening classes of the College of Liberal Arts are divided into two groups.

The first group is composed of those who wish to continue their education along cultural lines. The second group is composed of those who wish to prepare for admission to the School of Law. Under the rules of the Supreme Judicial Court in relation to the admission of attorneys in Massachusetts, an applicant is required to complete one-half of the work acceptable for a bachelor's degree in an approved college or university before he begins the study of law. The evening pre-legal program of the College of Liberal Arts is especially designed for those who wish to prepare for admission to either the day or evening division of the Northeastern University School of Law.

Increasingly the value of a broad cultural education is being realized. This is recognized in the pre-legal study required before admission to law school in nearly all states. It is also recognized in newly required courses of a cultural nature for accounting and engineering training. This cultural education is obtainable either before or after the completion of one's specific vocational training. Not only is a cultural education valuable in and of itself, but from a strictly vocational point of view it is highly important, the broadly educated man or woman in many instances having a distinct advantage so far as vocational advancement is concerned.

ASSOCIATE IN ARTS PROGRAM

Each evening course meets the same academic standards and carries the same semester hour credit as the corresponding course in the day program of the College of Liberal Arts. The courses, however, have been carefully selected to meet the needs of evening students.

The following requirements must be fulfilled by candidates for the degree of Associate in Arts:

1. A candidate must complete a total of not less than sixty-eight semester hours of academic work with a degree of proficiency acceptable to the faculty.
2. A candidate must meet through his program of studies the minimum course requirements listed below:

	<i>Semester Hours Required</i>
Economics	8
English	12
Government	6
History	8
Psychology or Sociology	4
Science	8
Other Courses	22
	—
Total	68

The above requirements may be met by class attendance three nights a week, forty weeks each year for the three years. In some cases it may be advisable for the best interest of the student to take more than three years to complete this program.

REQUIREMENTS FOR A.B. OR S.B. DEGREE

Any student who completes the requirements for the Associate in Arts degree and who also meets the requirements for admission to the Day College may become a candidate for a bachelor's degree in the College of Liberal Arts by completing an additional sixty-seven semester hours of work and by meeting major, minor and language requirements in the Day College.

COMBINED PROGRAM IN LIBERAL ARTS AND BUSINESS

Leading to the Degree of Bachelor of Business Administration

There are several areas of employment which require as preparatory training a natural combination of liberal arts with business courses. To meet this need the Evening College of Liberal Arts offers in conjunction with the School of Business a six-year program leading to the degree of Bachelor of Business Administration with specifications.

The degree requires satisfactory completion of three years of study in liberal arts (72 semester hours of credit) plus forty-five (45) semester hours of credit in business courses. The programs as outlined below in the several options are designed to provide the most adequate preparation for the specific areas of work. (See pages 15-17).

DEGREE PROGRAM

Liberal Arts:

	<i>Semester Hours</i>
The equivalent of three full years of courses in the Evening College of Liberal Arts.....	72

Business:

Courses totaling forty-five (45) semester hours in one of the options listed on pages 15-17	45
---	----

Occupational Experience:

Occupational Experience is awarded to a maximum of ten (10) semester hours. The award is based on the nature and quality of the student's occupation during his enrollment.....	10
Total semester hours required for degree.....	127

OPTIONS*PERSONNEL AND INDUSTRIAL RELATIONS****FIRST YEAR**

<i>Course No.</i>	<i>First Semester</i>	<i>Semester Hours</i>	<i>Course No.</i>	<i>Second Semester</i>	<i>Semester Hours</i>
IR 22	Labor-Management Relations.	2½	IR 23	Labor Leg. — Union-Management Relations.	2½
L 13	Law I.	2½	IR 24	Labor Leg.—Std. & Cond. Employment.	2½
IR 11	Personnel Admin. — Human Relations.	2½	IR 12	Personnel Admin. — Human Relations.	2½
		<hr/>			<hr/>
		7½			7½

SECOND YEAR

Ec 7	Statistics.	2½	Ec 8	Statistics.	2½
IM 9	Job Evaluation.	2½	IR 8	Techniques of Supervision.	2½
A 13	Managerial Accounting.	2½	A 14	Managerial Accounting.	2½
		<hr/>			<hr/>
		7½			7½

THIRD YEAR

IR 13	Personnel Mgmt. Practices.	2½	IR 9	Wage Administration.	2½
IR 25	Labor Agreements.	2½	IR 27	Labor Relations Seminar.	2½
IR 6	Practical Train. Methods.	2½	IR 7	Industrial Sociology.	2½
		<hr/>			<hr/>
		7½			7½

LAW AND MANAGEMENT**FIRST YEAR**

L 5	Contracts.	2½	L 6	Contracts.	2½
A 13	Managerial Accounting.	2½	A 14	Managerial Accounting.	2½
Ec 5	Money and Banking.	2½	Ec 6	Money and Banking.	2½
		<hr/>			<hr/>
		7½			7½

SECOND YEAR

L 9	Law of Sales.	2½	RE 2	R. E. Law & Convey.	2½
L 7	Corp. Part. Agency.	2½	L 8	Corp. Part. Agency.	2½
A 41	Basic Federal Taxes.	2½	A 42	Basic Federal Taxes.	2½
		<hr/>			<hr/>
		7½			7½

THIRD YEAR

L 11	Negotiable Instruments.	2½	L 12	Creditors' Rights.	2½
IR 22	Labor-Mgmt. Relations.	2½	IR 23	Labor Leg. — Union-Management Relations.	2½
A 45	Tax Planning.	2½	A 46	Tax Planning.	2½
		<hr/>			<hr/>
		7½			7½

PRE-LEGAL OPTION**FIRST YEAR**

<i>Course No.</i>	<i>First Semester</i>	<i>Semester Hours</i>	<i>Course No.</i>	<i>Second Semester</i>	<i>Semester Hours</i>
A 1-2	Introductory Accounting.	5	A 3-4	Intermediate Accounting.	5
Ec 5	Money and Banking	2½	Ec 6	Money and Banking	2½
		7½			7½

SECOND YEAR

A 41	Basic Federal Taxes	2½	A 42	Basic Federal Taxes	2½
RE 1	Real Estate Fundamentals	2½	RE 2	R. E. Law & Conveyanc-	
L 16	Govt. Controls in Business	2½		ing	2½
		7½	IR 22	Labor-Mgmt. Relations..	2½
					7½

THIRD YEAR

IR 25	Labor Agreements	2½	IR 23	Labor Leg. I — Union-	
Ec 11	Business Finance	2½		Management Relations.	2½
E 11	Public Speaking — Parlia-		Ec 12	Business Finance	2½
	mentary Proc.	2½	Ph 6	Logic	2½
		7½			7½

SALES OPTION**FIRST YEAR**

A 13	Managerial Accounting..	2½	A 14	Managerial Accounting..	2½
D 1	Marketing	2½	D 2	Marketing	2½
L 13	Law I	2½	L 14	Law II	2½
		7½			7½

SECOND YEAR

L 15	Law III	2½	D 18	Packaging for Sales	2½
D 3	Principles of Selling	2½	D 5	Sales Management	2½
Ec 7	Business Statistics	2½	Ec 8	Statistics	2½
		7½			7½

THIRD YEAR

Ec 9	Bus. Plng. & Research	2½	Ec 10	Bus. Plng. & Research	2½
D 7	Market Research	2½	D 6	Sales Promotion	2½
D 10	Advertising Principles	2½	D 11	Advertising Problems	2½
		7½			7½

ADMINISTRATIVE OPTION**FIRST YEAR**

<i>Course No.</i>	<i>First Semester</i>	<i>Semester Hours</i>	<i>Course No.</i>	<i>Second Semester</i>	<i>Semester Hours</i>
A 13	Managerial Accounting..	2½	A 14	Managerial Accounting...	2½
L 13	Law I.....	2½	L 14	Law II.....	2½
Ec 5	Money & Banking.....	2½	Ec 6	Money & Banking.....	2½
		<hr/> 7½			<hr/> 7½

SECOND YEAR

L 15	Law III.....	2½	IR 8	Techniques of Supervision	2½
D 33	Credit Fundamentals....	2½	Ec 7	Business Statistics.....	2½
OM 1	Scientific Mgmt. — Office Practice.....	2½	OM 2	Office Org. & Admin....	2½
		<hr/> 7½			<hr/> 7½

THIRD YEAR

OM 3	Forms Design & Control..	2½	OM 4	Office Systems & Proced.	2½
IR 11	Personnel Admin. — Human Relations.....	2½	IR 12	Personnel Admin. — Human Relations.....	2½
IR 6	Practical Train. Methods.	2½	D 31	Purchasing.....	2½
		<hr/> 7½			<hr/> 7½

PUBLIC ADMINISTRATION**FIRST YEAR**

A 13	Managerial Accounting..	2½	A 14	Managerial Accounting...	2½
L 13	Law I.....	2½	L 14	Law II.....	2½
Ec 5	Money and Banking.....	2½	Ec 6	Money and Banking.....	2½
		<hr/> 7½			<hr/> 7½

SECOND YEAR

RE 1	Real Estate Fundamentals	2½	RE 2	R. E. Law & Conveyancing	2½
Ec 11	Business Finance.....	2½	Ec 12	Business Finance.....	2½
L 15	Law III.....	2½	L 16	Govt. Controls in Business	2½
		<hr/> 7½			<hr/> 7½

THIRD YEAR

RE 11	R. E. Appraisal (Res.)....	2½	RE 13	R. E. Appraisal (Comm. & Ind.).....	2½
PA 38	Municipal Law.....	2½	PA 37	Municipal Finance.....	2½
PA 39	Tech. Municipal Mgmt..	2½	PA 40	State & Local Relations..	2½
		<hr/> 7½			<hr/> 7½

*Special programs may be arranged to meet specific needs of the students upon approval of the Dean.

ASSOCIATE IN SOCIAL SCIENCES PROGRAM

For those wishing an integrated program of courses in the social sciences. The functional approach used in the design of these courses makes them especially valuable for those desiring practical instruction to equip themselves for employment as social service workers. They are also of practical value to teachers of social science courses in high schools as well as the large number of men and women who will find them worthwhile in providing information which should lead to happier lives through a better understanding of human associations.

The Associate Degree will be awarded upon satisfactory completion of seventy-two (72) semester hours of credit comprising the following suggested curriculum:

PROGRAM OF COURSES

FIRST YEAR

<i>Course No.</i>		<i>Semester Hours</i>	<i>Course No.</i>		<i>Semester Hours</i>
H 1	History of Civilization	4	H 2	History of Civilization	4
P 1-A	Survey of Physical Sciences . . .	4	P 2-A	Survey of Physical Sciences . . .	4
S 11	Fund. Social Sciences	2	S 11	Fund. Social Sciences	2
S 15	Cultural Anthropology	2	S 15	Cultural Anthropology	2

SECOND YEAR

S 1-2	Princ. of Sociology	4	S 3	Social Problems	2
			S 4	Social Pathology	2
Ps 1	General Psychology	4	Ps 9	Psychology of Personality . . .	2
Ps 7	Social Psychology	2	Ps 10	Abnormal Psychology	2
S 17	Preparation of Marriage	2	S 16	Criminology — Juvenile Delinquency	2
			S 18	Preparation of Marriage	2

THIRD YEAR

S 19	The Family I	4	S 20	The Family II	4
S 21	Social Service I	4	S 22	Social Service II	4
Ph 1	Principles of Philosophy	2	Ph 22	Philosophy — Social Ethics	2
S 23	Ethnology — Racial Relations	2	S 24	Ethnology — Racial Relations	2

The above requirements may be met by class attendance three evenings a week, forty weeks each year, for three years. In some cases it may be advisable for the best interests of the student that he take more than three years to complete this program.

THE FAMILY INSTITUTE

The family has always been recognized as one of the fundamental units of any social structure. With the increasing complexity of our economic and social order the problems associated with family relationships have become of major importance. Sociologists are aware of the change taking place in family life. Industry is increasingly conscious of the effect that family relationships have upon the productive efficiency of its employees.

The Family Institute presents courses for those who personally may wish a better understanding of successful family relationships as well as for those who may wish to use the training professionally in some phase of social work or in industry where it is being discovered that human relations are of primary concern to good management.

PROGRAM OF COURSES

	<i>Semester Hours</i>		<i>Semester Hours</i>
Principles of Sociology.....	4	Preparation for Marriage.....	4
Social Problems.....	2	The Family I.....	4
Social Pathology.....	2	The Family II.....	4
General Psychology.....	4	Fundamentals of Social Sciences...	4
Psychology of Personality.....	2	Criminology.....	2
Abnormal Psychology.....	2	Cultural Anthropology.....	4
Social Psychology.....	2		

A student may register for the complete program or may take any one or more of the courses providing he possesses the necessary prerequisite qualifications. The courses carry credit as indicated and may be used toward the requirements for the Associate in Social Sciences degree.

Students completing the entire program of forty (40) semester hours will be awarded a certificate in the Family Institute.

INSTITUTE OF NATIONS

The United States has assumed a dominant position in world affairs. Individually, however, we are unprepared to accept our responsibilities as world citizens. We are ignorant of the other peoples of the world, their histories and cultures, their social, economic, and political systems and problems. Our acceptance of other peoples as neighbors can come only when we can replace ignorance and mistrust with understanding and confidence.

The Institute of Nations presents an integrated program of courses concerning the "U. S. in the World Community." It is arranged to make world events intelligible; to stimulate a critical evaluation of newspapers and other news sources; to encourage an increased social participation and stimulate the full utility of the privileges of citizenship through an international understanding which is the only path to world peace.

The important current events that affect our present activities and our future well-being will be viewed in perspective with the social, economic, political, cultural, and geographic factors that led to their happening. They will be studied only in terms of major trends and movements; while history will be examined wherever it is necessary to make the present more understandable. Thus the programs will be of practical utility and interest to every citizen.

PROGRAM OF COURSES

Each course will consider a separate area where a natural division is evident for geographic, ethnic, political, or economic reasons. The areas to be included are those which have a current relationship to the United States in the World Community.

	<i>Semester Hours Credit</i>
The Soviet Union	4
Western Europe	4
Asia	4
The Middle East	2
Latin America	2
The U. S. and World Organization	4

A student may register for the complete program or may take any one or more of the courses. The courses carry credit as indicated and may be used toward the requirements for the Associate in Arts degree.

Students completing the entire program of twenty (20) semester hours will be awarded a certificate in the Institute of Nations.

LABOR RELATIONS INSTITUTE

The management of labor relations presents the most vital and challenging aspect of our industrial development of the immediate future. Continuance of our American way of industrial democracy demands a harmonious understanding of the underlying principles of labor and industrial management for the peaceful adjustment of their common problems.

The Labor Relations Institute of Northeastern University was organized to serve this need. It is dedicated to the service of both labor and management. It directly concerns the work of industrial and labor executives, plant managers, personnel directors, union shop councillors and stewards. Teachers in the fields of management and the social sciences will also find that the program provides a valuable academic background for their instruction.

PROGRAM OF COURSES

Required Courses

LABOR-MANAGEMENT RELATIONS — The history and development of Collective Bargaining	COLLECTIVE BARGAINING II — The Labor Contract
COLLECTIVE BARGAINING I — Government and Labor-Management Relations	LABOR RELATIONS SEMINAR — Case studies in Collective Bargaining

Elective Courses

ACCOUNTING AIDS TO MANAGEMENT	MOTION STUDY
CONFERENCE LEADERSHIP	ADVANCED MOTION STUDY
GRIEVANCE ANALYSIS & PROCEDURE	PERSONNEL ADMINISTRATION
INDUSTRIAL PSYCHOLOGY	PSYCHOMETRIC TESTING IN INDUSTRY
INDUSTRIAL SAFETY	PUBLIC SPEAKING
JOB EVALUATION, MERIT RATING	TIME STUDY
JOB RELATIONS AND SUPERVISORY TRAINING	ADVANCED TIME STUDY
	WAGE ADMINISTRATION

To complete the program for a certificate requires two evenings a week for two years. It is designed to accommodate those students wishing to take individual courses in preference to the full program. The courses have college credits in either the College of Liberal Arts or the School of Business upon prior approval of the dean of the respective school.

GENERAL INFORMATION

Application for Admission

The college year begins in September. Students are also admitted at the beginning of the second semester to courses for which they have the required background.

Each applicant for admission is required to file an application blank setting forth his previous education and the name of one person to whom reference may be made concerning his character and previous training.

Inside the back cover of this catalogue is an application blank. It should be filled out in ink and forwarded to the Director of the Evening Courses of the College of Liberal Arts, Northeastern University, 360 Huntington Avenue, Boston 15, Massachusetts. Upon receipt of the application, the Director obtains the previous school records, the statement from the reference and, after considering these, informs the applicant as to his eligibility for admission.

Applications should be filed preferably before the registration period, thus allowing time to determine eligibility for admission and to adjust any schedule problems before the opening night. Applicants are urged to visit the school for a personal interview if it is possible for them to do so.

Applicants seeking advanced standing should arrange to have transcripts of their previous college records forwarded with their application.

ADMISSION REQUIREMENTS

Fifteen units are required for admission and must include three units (four years) in English and at least six units in foreign languages, mathematics, science, or social studies except that students planning to major in mathematics or science must present two units in algebra and one unit in plane geometry. The remaining units are elective from other secondary school subjects which are acceptable to the Committee on Admissions.

A unit is a credit given to an acceptable secondary school course which meets at least four times a week for periods of not less than forty minutes each throughout the school year.

The Department of Admissions reserves the right to require a candidate to be present for an examination in any subjects that it may deem necessary because of some weakness in the secondary school record.

Registration

The filing of the application for admission does not constitute registra-

tion. All students are required to register at the college and arrange for the payment of their tuition during the registration period. (See calendar, page 4.)

Attendance and Examinations

Attendance is required of all students at recitations and lectures continuously throughout the academic year.

Regular final examinations are held at the close of each course.

No student will be permitted to take a final examination in a course who has been present at less than seventy per cent of the lectures. To be entitled to attendance credit a student must be present at least one hour in a one and one-half hour lecture.

Make-up examinations are scheduled in March and September of each year. (See calendar, page 4.) Unsatisfactory and incomplete grades must be removed not later than the next school year following that in which they were received.

Grades

The work of each student shall be graded upon examinations according to the following scale:

A	Superior	} Honor Grades
B	Above average	
C	Average	
D	Lowest passing grade	
E	Unsatisfactory	
F	Failure	
I	Incomplete — no examination	

Honor List

The Honor List, issued at the end of each semester, contains the names of all students taking a full program who have an honor grade average in all subjects with no grade below "C" in any subject.

Graduation with Honor

Candidates who have maintained an honor grade average will be graduated with honor. To be eligible for honors a student must have completed a minimum of two full years of study in the College of Liberal Arts.

Scholarships

Partial tuition scholarships are awarded annually to the two highest ranking students of the freshman and middler classes. These awards are

made during the summer and are based on the record made during the previous school year.

Freshman Class — One \$80.00 scholarship is awarded to the highest ranking student.

One \$40.00 scholarship is awarded to the second highest ranking student.

Middler Class — Similar awards are made to the two highest ranking students.

In order to be eligible for these awards, students must fulfill the following conditions:

1. They must be carrying a full program — not less than twenty semester hours.
2. They must register for a full program in the fall succeeding the award.

TUITION AND OTHER FEES

Tuition and fees are not transferable and are refundable only as stated under "Refund of Tuition."

Checks and drafts for all charges are to be drawn to the order of Northeastern University.

There are no auditors or auditor's rates in the College of Liberal Arts.

Matriculation Fee

The University matriculation fee of \$5 must accompany the initial application for admission to the University. This fee is non-refundable.

Tuition Fee

Tuition is charged at the rate of \$8 per semester hour of credit for all students.

Tuition will be payable in four installments as follows:

First installment due on or before date of starting classes.

Second installment on November 15.

Third installment on or before starting date of second semester.

Fourth installment on April 15.

Late Payment Fee

Bills for tuition and fees are payable on or before Saturday of the week of issuance. A Late Payment Fee of \$2 is charged for all students failing to comply unless special payment arrangements are approved by the Student Accounts Office.

Deferred Payment Privilege

Students who would be denied the advantages of a systematic education

if required to meet the tuition payments in the manner specified above, may make other payment arrangements with the Student Accounts Office.

Courses in Other Departments of the University

School of Business students assigned to courses in other departments of the University are charged the tuition rates and other fees effective in the departments to which they are assigned.

Late Registration

No reduction in tuition is made for late registration. A student is neither entitled to classroom privileges nor considered as registered and enrolled until tuition due has been paid or satisfactory arrangements made in person with the Dean.

General Fees

A fee of \$3 is charged for each make-up test, \$5 for each conditional examination or advanced standing examination. This fee must be paid on or before the date of the examination.

The University graduation fee, charged to those who are candidates for the Bachelor or Associate degree, is \$15, payable on or before May 1 of the year in which the student expects to graduate.

General Financial Information

Checks should be drawn payable to Northeastern University.

Students are not permitted to attend class sessions or take any examinations or tests until they have paid their tuition fees or have made satisfactory arrangements for payments.

Students will not be advanced in class standing, or permitted to re-enroll in the University, nor will degrees be conferred until all financial obligations to the University have been met.

No certificate of honorable dismissal will be issued to any student who has not fully met his financial obligations to the University.

Refund of Tuition

Requests for refunds must be made at the time of filing the Application for Withdrawal at the School Office. If the withdrawal notification is sent in by mail, the refund should be requested in the letter with reasons which necessitate the withdrawal. *No refunds will be granted to a student who voluntarily withdraws* or who has attended more than five weeks of the term for which payment has been made.

Refunds of tuition will be considered only in the following instances:

1. If, because of illness, a student is compelled to withdraw before the fifth week of the term, or

2. If a student who is regularly employed is sent out of town permanently by his employer, or
3. If the hours of employment of a student who is regularly employed are changed so as to make it impossible for him to continue in attendance, or
4. If a student is inducted into military service.

The Committee on Withdrawals will consider requests for tuition refunds only on the following bases:

1. That the application for withdrawal be made immediately after the student ceases attendance.
2. The request for refund is accompanied by an *acceptable* physician's certificate in the instance of illness, or by an *acceptable* employer's certification in the instance of a change in place or hours of employment.
3. Evidence of induction into military service.

For cases complying with the above, partial refunds on tuition may be allowed according to the following schedule:

<i>Petition for Withdrawal Filed Within</i>	<i>Refund</i>
Two Weeks	80 per cent
Three Weeks	60 per cent
Four Weeks	40 per cent
Five Weeks	20 per cent
After Five Weeks	0 per cent

The above does not include fixed or non-refundable fees or laboratory fees, for which there is no refund allowed.

The official "Application for Withdrawal" form may be obtained in the School Office. All refunds are made through the Student Accounts Office of the University. The refund procedure in such cases takes from three to four weeks. A check is mailed direct to the student for any refund to which he is entitled.

DESCRIPTION OF COURSES

Not all courses are offered every year. The University reserves the right to withdraw any course in which there are less than eight enrollments.

ECONOMICS

Ec 1 Economic Principles

A thorough grounding in the fundamental principles and laws of economics is the aim of this basic course. The main topics include the nature and organization of production, the nature and importance of wants, the relation of money and prices, the process of exchange, and the nature of international trade.

2 semester hour credits

Ec 2 Economic Principles

A continuation of Ec 1. A careful analysis is made of the determination of price under conditions of competition and monopoly, and of the distribution of wealth and income in the form of wages, economic rent, interest, and profits. The elements of insurance are discussed in connection with profits.

Preparation: Ec 1

2 semester hour credits

Ec 3-4 Economic Problems

In this course the application of economic principles to some of the major economic problems of modern society is emphasized. The problems studied include consumption, protective tariffs and subsidies, labor problems such as unemployment and labor unions, and the business cycle, price stabilization, the agricultural problem, the relation of government to business, including control of monopolies and public utilities, insurance, public finance, and proposals for the remodeling and improving of the economic system.

Preparation: Ec 1, Ec 2

4 semester hour credits

Ec 5-6 Money and Banking

The primary purpose of this course is to provide a comprehensive knowledge and understanding of the relationship of money, monetary and fiscal policy, and of financial institutions to our economic society and to business management. Among the major topics are money and monetary theory, central banking systems, commercial banking, credit instruments, bank loans and investments, credit policy and its relation to fiscal affairs, sources of funds other than commercial banks, international finance and foreign exchange, and current banking and monetary problems.

(Prerequisite, Ec 1-2)

5 semester hours credit

Ec 7 Statistics

The objective of this course is to introduce students with no previous training in statistics to its practical use in analyzing problems encountered in business and industry. It presents the fundamental concepts underlying analytical method and serves as a prerequisite for advanced courses in statistics. Presented from the point of view of the business man, it is concerned with the nature and calculation of averages; measures of dispersion; measures of skewness, kurtosis, and normal curve analysis; an introduction to basic probability and its relation to sampling. Tabular and graphic presentation of data will be considered. A part of each session will be devoted to laboratory practice in the solution of problems. *2½ semester hours credit*

Ec 8 Statistics

This course is a continuation of Ec 7 and introduces the student to the field of time series analysis. Among the principal topics considered are the measurement of secular trends by free-hand and mathematical methods; the measurement of seasonal fluctuations; cyclical fluctuations; the general nature and calculation of index numbers; and an introduction to linear correlation. A part of each session is devoted to laboratory solution of problems.

(Prerequisite, Ec 7)

2½ semester hours credit

Ec 9-10 Business Planning and Research

To assist business men to make more definite and more accurate business decisions through a broader understanding of the significant information and statistics regarding our economic system and its operations is the major objective of this course. Sources of information, strengths and weaknesses of principal measures of business activity, and the use of several widely accepted indexes in general business forecasting are a major part of the study, as well as sales forecasting, business cycle analysis, and the effects of the broadening relation of government policies upon the individual business firm.

5 semester hours credit

Ec 11-12 Business Finance

This course studies the financial aspects of the management of the modern corporation as the major form of business organization. Types of stocks and bonds, promotion of enterprises, distribution of securities, financial policies relating to fixed and working capital, dividends, surplus, and reserves all receive attention. Recapitalization, reorganization, mergers, and liquidation are considered, as well as the relationship of corporation finance to taxation and public policy.

(Prerequisite, Ec 5-6)

5 semester hours credit

Ec 21 Economic Geography

This course is concerned with the role of geography, geology and climatology in determining the centers of population, the location of natural resources, and the development of agriculture and industry. It considers their location in terms of their natural relationship to the flow of world trade. The socio-economic principles that underlie the development of resources in different countries and climates are emphasized. It also analyzes the political-economic aspects of resource distribution and development in the form of trade and world relationship.

2½ semester hours credit

Ec 22 International Economics

This course attempts to analyze foreign trade and finance in terms of current practices and theories. It discusses national welfare and foreign trade; international accounting and what the balance reveals; the making of international payments and documents used; the rate of exchange; international equilibrium; foreign trade and the national income; principles behind protection; trade control through the tariff, import quotas, exchange control and their evaluation; international commodity agreements and commercial treaties; monetary policy problems; the international gold standard; exchange reserve standards; exchange stabilization fund; the shortage of dollars; the International Monetary Fund; international investments.

2½ semester hours credit

ENGLISH**E 1-A English I**

The aim of this course is to help the student attain competence in the understanding and evaluating of modern literature and in written expression. It includes a review of the structural essentials of the English language, various written assignments, and the study of essays and informational articles.

2 semester hour credits

E 2-A English I

Continuing the general purposes of E 1-A, this course proceeds to a study of the special problems of description and narration, and to a critical reading of poems, short stories, and plays.

2 semester hour credits

E 11 Public Speaking — Parliamentary Procedure

This course is designed to train students in public speaking and parliamentary procedures. In content the course augments training in public speaking by adding those speech situations unique to active participation and leadership in organizations whose programs are educational, civic, social, fraternal, veteran, or labor, and whose functions as deliberative necessitate observance of basic parliamentary procedure in keeping with by-laws, constitutions, or charters. Robert's Rules of Order, Revised, is the parliamentary text used.

2½ semester hour credits

E 15 Survey of English Literature

A survey of English literature to 1800. After a brief study of the social and political background of each literary period, the writing of the period is considered, and the more important writers are studied and read in detail. The purpose of the course is to give the student an appreciation of English literature as a whole, and an intimate knowledge of its major figures.

2 semester hour credits

E 16 Survey of English Literature

A survey of English literature from 1800 to the present century. The outstanding writers are read, studied, and related to the general background of nineteenth-century England. The purpose of the course is to give the student an understanding of the writers who contributed most to the formation and development of modern literature in England.

2 semester hour credits

E 25 American Literature to 1860

A survey of American literature from colonial times to the triumph of the transcendental movement in New England. The work of Bryant, Irving, Cooper, Poe, Emerson, Thoreau, Lowell, Holmes, Longfellow, and Melville will be emphasized.

2 semester hour credits

E 26 American Literature After 1860

Continuing E 25, the course will consider the rise of realism after the Civil War, the development of American humor, the appearance of local color writers, and modern trends since 1900.

2 semester hour credits

GOVERNMENT

Gv 1 American Government and Politics

The study of our National Government with respect to its organization and function; its powers and limitations under the Constitution; its legislative, administrative, and judicial machinery under the party system of government and bureaucracy.

2 semester hour credits

Gv 2 American Government and Politics

A more detailed study of the relationships of our federal, state, and municipal governments, including an analysis and comparison of the various state governments and types of municipal government with respect to state and local agencies for carrying out the executive, legislative, and judicial functions of government in a democratic country.

2 semester hour credits

Gv 3 Comparative Government

The older governments of Europe, those principally of Great Britain and France, but also of Switzerland and the Scandinavian countries, are described and analyzed in this course. Institutions are compared in these various states with reference to America and the newer governments of Europe.

2 semester hour credits

Gv 4 Comparative Government

A study of the newer governments of Europe, as found in Germany, Italy, and the Soviet Union. Democracy and dictatorship are analyzed as different modes of life and rule. These states are compared to each other, to the older governments of Europe, and to the United States.

2 semester hour credits

Gv 8 Modern Political Theory

A critical study is made of the major developments in political theory since Bentham, with special reference to the influence of these developments upon American politics and political institutions. Attention is paid to the modern conflict between the democratic and the totalitarian conceptions of the state.

2 semester hour credits

Gv 10 The Soviet Union

This course will include the land and its resources; the people and their ethnic background; the peasant problem; the Czarist political and social institutions; pre-revolutionary social thought; the revolution (Bolshevik) and the intervention; Communist theory; the period of war communism and the N.E.P.; the Five-Year Plans and Soviet economic structure; the 1936 constitution and the Soviet government structure; dictatorship or democracy; Nationalism; Pan-Slavism and Internationalism; Czarist foreign policy; Soviet foreign policy 1917-1940; Russo-American relations before World War II; World War II and "Big Three" co-operation; the Russian satellite nations before and since World War II; problems of the two-power world; the E.R.P. and Western Europe; the Truman Doctrine and the Mediterranean; conflict in Asia; the Communist Party and the nature of treason.

4 semester hour credits

Gv 11 Asia

This vast area will be considered by sections in each of which a background will be presented including the people, land, resources, early history, religion, customs, etc. The subdivisions in their order of consideration are: India, colonialism and the struggle for freedom; India, Pakistan, and the future; Indonesia, Burma and Indo-China and their struggles for independence; China, the Chinese revolution and the Kuomintang, the war years, Red China and its ideology, China and the future; Japan, its bid for leadership and the New Asia, the occupation and the future; Korea; the Soviet Union in the Far East; British, Dutch and French colonial interests; the Open-Door Policy and American interests; the Philippines and American Pacific possessions; "Asia on the March."

4 semester hour credits

PA 37 Municipal Finance

This course is basically concerned with the financial structure of a municipality, its sources of revenue, budget preparation, temporary and long-term financing to meet operational needs; development and analysis of debt statements to determine the community's fiscal ability to pay. The course includes discussion of the general laws governing municipal financing; the money markets, their operations and effect upon municipal financing; bond issues, average maturities and coupon rates; credit ratings; tax title liens, etc.

2½ semester hours credit

PA 38 Municipal Law

The course in municipal law is intended to set forth the basic functions of a municipal corporation together with an explanation of its relationship to the state, its own inhabitants and to persons with whom it deals to the end that the student may be aware of the problems encountered by municipal administrators.

2½ semester hours credit

PA 39 Techniques of Municipal Management

The course introduces the student to a basic understanding of the city manager, his job qualifications and problems. It discusses the questions of organization and reorganization, personnel policies including job analysis and evaluation, and considers individually the several major areas of responsibility as follows: finance, budgetary control, cost accounting, debt administration; legal regulatory practices; public health and safety, sanitation; welfare and charities; public services, schools, hospitals, libraries, recreation, utilities; fire and police protection; interdepartmental and public relations; planning and research.

2½ semester hours credit

PA 40 State and Local Relations

The objective of this course is to explore the areas of operation wherein the municipality has a close working relationship with the state. It includes a careful analysis of the executive, judicial, and legislative branches of the state government, emphasizing their individual functions, duties, and responsibilities. It is particularly concerned with the legislative process and procedures as they affect municipal government as well as such phases of administration as state, federal and local taxation; distribution of state funds in forms of grants-in-aid, and shared taxes; state and local welfare; schools aid, etc.

2½ semester hours credit

HISTORY

H 1 History of Civilization

This is primarily a background course. Introductory lectures deal with primitive society, the development of language and writing, and the early contributions of Egypt and Asia. More detail is given to the structure of Greek and Roman society, the rise of the Christian Church, the barbarian invasions of the Empire, the growth of Islam, and the life of the early Middle Ages.

4 semester hour credits

H 2 History of Civilization

This course deals with the growth of the monarchies in Europe, the medieval Church, the art and literature of the Renaissance and Reformation, the economic revolution, the Age of Reason in France and England, the Old Regime and the Revolution in France, and the growth of science and industrialism.

As in H 1, the emphasis is upon the cultural rather than the political history of Europe.

4 semester hour credits

H 9 The United States to 1865

This course is an interpretation of the events which shaped the American nation to the Civil War. Social customs, economic influences, racial contributions, and humanitarian movements are not neglected, though the political history is stressed.

2 semester hour credits

H 10 The United States Since 1865

Major attention is given to the social, economic, and political foundations of recent history in this survey of the transition of America from an agricultural to an urban industrialized society since the Civil War. Consideration is given to the problems arising with the emergence of America as a world power.

2 semester hour credits

H 13 English Constitutional History

A study of the origin and development of the English Constitution up to 1485. Special emphasis is placed on those institutions and concepts that form the background for American constitutional history. The important differences between the American and English constitutions are stressed. This course is important for those who intend to study law.

2 semester hour credits

H 14 American Constitutional History

An introductory course to the history and principles of American constitutional law. It is designed to give the student an understanding of case-law and the significance of the courts in the American system of government. Among the special topics covered are: the power of the Supreme Court to pass upon statutes, the relation of national and state powers, civil rights, and the Commerce clause. Highly recommended for students planning to study law.

2 semester hour credits

H 15 History of American Foreign Policy

An historical survey of the foreign relations of the United States from 1775 to the present. The course is concerned with the major trends and influences, traditional policies, and actual practices in our foreign relations. One of the objectives of the course is to provide the student with a better understanding of the position of this country in world affairs today.

4 semester hour credits

PHILOSOPHY

Ph 1 Introduction to Philosophy

This introductory course combines the historical and systematic approaches to the subject. The historical treatment includes a survey of the chief philosophers and the development of basic philosophical ideas. The systematic treatment presents the several types of philosophy, such as realism, materialism, idealism, and pluralism. The place of philosophy is considered in its relation to ethics, religion, and natural sciences. The course both acquaints the student with facts about philosophy and trains him to think philosophically. *2 semester hour credits*

Ph 2 Problems of Philosophy

The chief systems of thought are applied to what may be termed the persistent problems of philosophy. The problems are to be found in the fields of epistemology, teleology, and metaphysics. The following topics suggest representative problems which will be studied: the relation between mind and body, the nature and extent of freedom of the will, the validity of knowledge, and the bearing which the more recent views in physics and psychology have upon related philosophical problems.

Preparation: Ph 1

2 semester hour credits

PHYSICS

P 1-A Survey of the Physical Sciences

The purpose of the course is to give a definite conception of the physical world to those students who ordinarily would not elect a science course but who need to know something about the contributions and the place of the physical sciences in contemporary civilization. This course begins with a study of the universe and solar system. Consideration is given to the principles of distance, mass and weight, and the simple dynamics of bodies. The earth is studied from the viewpoint of its geological, meteorological, and chemical aspects, these main fields introducing a non-mathematical discussion of magnetism, heat, and electricity.

4 semester hour credits

P 2-A Survey of the Physical Sciences

In this course, which continues P 1-A, the phenomena of light are taken up. Following this, consideration is given to spectroscopy and matter structure, the periodic table, acids, bases, salts, and organic compounds. The course concludes with a discussion of certain aspects of physics which are of practical importance in the household, such as heating, lighting, refrigeration, and electrical appliances.

4 semester hour credits

PSYCHOLOGY

Ps 1 Introduction to Differential Psychology

An elementary survey of the psychology of individual differences including personality differences, together with a presentation of some of the practical applications of the findings of differential psychology.

2 semester hour credits

Ps 2 General Psychology

An introduction to general experimental psychology. The topics considered include learning, memory, thought, imagination, motivation, emotion, sensation, and perception.

Preparation: Ps 1

2 semester hour credits

Ps 7 Social Psychology of Everyday Life

A course devoted to the psychological examination of some of the phenomena observable in everyday social life. This includes an analysis of the socialization process, the development and role of language in everyday life, and those problems which are particularly important in wartime — propaganda, rumor, and morale.

2 semester hour credits

Ps 9 Psychology of Personality

Presents a survey of historical and contemporary theories of the nature of personality. The problems of the generality of traits, the consistency of expression, and the relation of cultural factors to personality, growth, and integration will be discussed.

Preparation: Ps 2

2 semester hour credits

Ps 10 Abnormal Psychology

An introduction to the field of psychopathology. The psychology of the neuroses and the minor disturbances of everyday life are emphasized. Interpretation of clinical findings in the light of some contemporary schools of psychology is included.

Preparation: Ps 9

2 semester hour credits

SOCIOLOGY**S 1 Introduction to Sociology**

In presenting a survey of the origins and sources of human society, this study provides orientation for the courses in principles and problems which follow. The several theories of organic evolution are discussed. The antiquity of man and basic anthropological data are considered. The racial and ethnic groupings of man are then studied in the light of biological, geographical, and cultural factors.

2 semester hour credits

S 2 Principles of Sociology

Facts and principles basic to a general knowledge of the field of sociology are presented. The origins, forms, and forces of human associations are discussed. Consideration is given the several leading schools of sociological thought. The several theories of organic evolution are discussed. The antiquity of man and basic anthropological data are considered. The racial and ethnic groupings of man are then studied in the light of biological, geographical, and cultural factors. The course is designed to meet the needs of the student who desires only an elementary survey of the subject, as well as the student who plans to take advanced courses in social science.

2 semester hour credits

S 3 Social Problems

Attention is given the nature, complex causation, and interrelatedness of social problems in general. Cultural change, with its attendant lags, as well as other social forces and conflicts are studied. While sociological theory is occasionally introduced to clarify the problem at hand, the course is essentially practical in character. Such problems as poverty and unemployment, race antagonisms, population pressures, and the broken home are considered. Emphasis is given those pathological conditions which exist in relations between the individual and the group. Typical subjects presented include mental defectiveness and disease, alcoholism and drug addiction, suicide, delinquency and crime, and pathologies of domestic relations. Optional field trips to various institutions give concreteness to the problems studied.

Preparation: S 1, S 2

2 semester hour credits

S 4 Social Pathology

Similar to the course in Social Problems in background and approach, this study deals with the maladjustments and ills of human society. Emphasis is given those pathological conditions which exist in relations between the individual and the group. Typical subjects presented include mental defectiveness and disease, alcoholism and drug addiction, suicide, delinquency and crime, and pathologies of domestic relations. The field trips arranged for this course add to the practical knowledge of the social ills which are studied.

Preparation: S 1, S 2

2 semester hour credits

S 7 Principles of Social Ethics

To clarify the meaning of morality in social relations is the aim of this study. Right and wrong conduct is analyzed in the light of the highest values for human society. Moral laws are discussed, and the various systems of ethics are evaluated. Scientific attitudes are encouraged in order that one's moral judgments may be compatible with one's best reflective thought.

Preparation: S 1, S 2

2 semester hour credits

S 11 Fundamentals of Social Sciences

An investigation into the factors, controls, problems and points of view regulating human conduct. A critical analysis of the social sciences, including anthropology, psychology, sociology, ethnology, history, government and politics, jurisprudence, etc., discussing their origins, terminologies, formations, etc., and weaving this basic data into an understanding of their interrelationships.

4 semester hour credits

S 16 Criminology

The nature and causes of crime, the criminal as a social problem, judicial agencies and procedures with past and present theories and penological practices. Procedures in adult courts, juvenile courts, and family courts. Prison systems as practiced both in Europe and the United States. Classification. Prison labor. Education within prisons. The theory of punishment as a deterrent. The individualization of treatment. Child guidance clinics. Youth service boards. The Borstal System. Social and cultural factors affecting crime. The place of psychiatry, social work, and religion in criminal treatment. The value and effectiveness of probation, parole, and indeterminate methods of treatment.

2 semester hour credits

S 17-18 Preparation for Marriage

Critical historical analysis of marriage forms and their origins. Factors involved in love and courtship. Parent-child roles during courtship to husband-wife relationship. Psychologic, medical, and theologic prerequisites to marriage. Examination of marriage laws, legal rights and duties of constituents. Marital values and problems previewed, e.g., recreational, educational, religions, child guidance, divorce, etc.

Course designed to summarize research to date of special importance to Social Science majors and those identified with social service agencies.

4 semester hour credits

S 19 The Family I — The Primary Social Institution

The American Family — comparison and contrast with other Occidental and Oriental forms, both ancient and contemporary. Current changes in family life and causes. Genic and psychogenic conditioning explaining the relationship between family members. Particular emphasis is given to the relation of the family to the social sciences and the promotion of education of young people for family life, marriage and parenthood. Of prime value to social service personnel and social science teachers.

4 semester hour credits

S 20 The Family II — Problems of

Causes of family disorganization — the impact of social pathology on family life. Case studies secured from welfare agencies. Reformatories, societies for prevention of cruelty to children, court records, and infirmaries for the mentally deficient. The negative influences affecting family health, e.g., disease, crime, poverty, and their prevention. The responsibilities of parenthood defined.

4 semester hour credits

S 21 Social Service I

A survey of welfare agencies. Their origins, functions, and method of operation. Problems of agencies involving health, child care, legislation, population distribution, etc. Emphasis is placed upon voluntary and state agencies and laws applicable to them.

4 semester hour credits

S 22 Social Service II

Federal agencies and laws applying to their administration. The role of the Federal Government in national welfare and relief. Problems encountered, medical, economic, political, in agency management. Privileges and rights of a United States citizen under social service laws are reviewed.

4 semester hour credits

S 23-24 Ethnology — Race Relations and Cultural Contacts

America, the Melting Pot of the World. A critical study of racial traits and cultural associations. The differences between "race" and "culture." Race the biological concept. Culture a universal maturing process. The problems of races and nationalities. Race conflicts and exploitation. An examination of the strong contemporary doctrines of racialism. A survey of the premises in which racial and cultural misunderstandings take root. An analysis of race differentials and culture differences. An attempt to reach scientific conclusions pertaining to the causes of biological variations and race attitudes.

4 semester hour credits

ACCOUNTING

A 1-2 Introductory Accounting

This course is designed to present basic instruction for those who may desire a background understanding of accounting principles or for those who may plan to enroll later in more advanced courses. Emphasis is placed upon proprietorship accounts, including books of entry, statements, business practices, adjustments, and an introduction to partnership accounts. Drill and practice work are required for proficient handling of simple accounting transactions.

(No previous knowledge of bookkeeping or accounting necessary) 5 semester hours credit

A 3-4 Intermediate Accounting

A continuation of Introductory Accounting, treating with problems of the partnership and corporate forms of business entities. Accounts for a manufacturing business are introduced. In addition to the drill and practice work on accounting technique, a mastery of many accounting principles is required.

(Prerequisite, A 1-2)

5 semester hours credit

A 13-14 Managerial Accounting

A study of the broad background of accounting and business transactions to enable the student to analyze and interpret intelligently financial statements and other accounting reports. The course demonstrates the use of accounting in management and financial control. Topics covered are the development of accounting fundamentals, preparation of financial statements, corporation and manufacturing accounts, evaluation of balance sheet items, analysis and interpretation of financial statements and other trends, and the use of accounting as an aid to management.

(No previous knowledge of bookkeeping or accounting necessary) 5 semester hours credit

A 41-42 Basic Federal Taxes

This course provides a thorough basic coverage in the principles of federal income taxes. A detailed study is made of the Federal income tax law and its application to the incomes of individuals, partnerships, corporations, and fiduciaries. Many practical tax problems are presented for study and solution.

(Prerequisite, A 3-4)

5 semester hours credit

A 43-44 Advanced Federal Taxes

This course is designed to prepare the student to handle the complicated tax problems arising in everyday business. To give the student experience in methods used in actual tax practice, he is required to study the provisions of the Internal Revenue Code, analyze numerous special tax problems, and solve them by applying relevant provisions of tax law. Solutions must be supported by citations.

(Prerequisite, A 41-42)

5 semester hours credit

A 45-46 Tax Planning

An advanced course in corporate tax problems, covering tax advantages and disadvantages of the corporate form of organization; dangers of inadequate capitalization; compensation problems, including deferred compensation, bonus plans, and pension plans; problems of close corporations; the section 102 penalty; corporate reorganization and liquidation; expense accounts of executives; research and development expenses; and cancellation of indebtedness. A detailed analysis of real estate tax problems, including tax aspects of mortgages, lease agreements containing options to buy, sales and lease backs; also purchase and sale of a business, including covenants not to compete; survivorship purchase agreements; pointers on bad debts, worthlessness, and other business losses. Methods of effecting tax economies in connection with these problems will be stressed.

(Prerequisite, A 43-44 or its equivalent)

5 semester hours credit

LAW**L 5-6 Contracts**

Contracts: their importance to the business man in the everyday conduct of his affairs, why contracts are necessary, how they are made and enforced; the subject matter of contracts; the rights and liabilities of the parties; the termination of contractual relationships.

5 semester hours credit

L 7-8 Corporations, Partnerships, Agencies

Problems of organizing various businesses, the forms of business enterprises; the powers and liabilities of business organizations and their officers; inter-corporate problems; rights of creditors and stockholders; reorganization and termination of a business organization's affairs. Agency: the function of agents in present-day business; the legal relationships among agent, employee and third parties; the duration of agency relationship and methods of termination.

(Prerequisite, L 5-6)

5 semester hours credit

L 9 Law of Sales

Transfer of property interest in goods; nature of sales contracts; Statute of Frauds; seller's warranties; rights and remedies of sellers and buyers; unfair and illegal market practices such as infringements of trademarks, disparagement of competitors, etc.

(Prerequisite, L 5-6)

2½ semester hours credit

L 11 Negotiable Instruments

Legal devices for raising money and extending credit, such as promissory notes, bills of exchange, checks, trade acceptances, bills of lading, warehouse receipts; formal requisites of negotiable paper; negotiation; discharge rights and defenses.

2½ semester hours credit

L 12 Creditors' Rights

Mortgages; pledges; conditional sales; suretyship and guaranty; bailments; bankruptcy.

2½ semester hours credit

L 13 Business Law I

Contracts: nature, kinds and formation of contracts; essential elements; form and interpretation of contracts; breach, remedies and damages. Agency: nature, purpose and formation of agency relationship; rights and duties of principal and agent, scope of agent's authority; rights and duties of principal and third persons; termination of agency. Employer and employee: compensation laws; duties of master; contributory negligence doctrine; injuries to third persons.

2½ semester hours credit

L 14 Business Law II

Negotiable instruments: bills, notes and checks; requirements of a negotiable instrument; negotiation; liabilities and defense of parties; procedure upon dishonor; discharge. Bailments: nature and kinds; rights and duties of parties; carriers; documents of title. Sales: nature of sales contracts; warranties; transfer of title; rights and remedies of seller and buyer. Insurance: formation and function of insurance contract; kinds of policies; legal phases of life, property and other insurance. Suretyship: rights of the surety and the guarantor; rights and duties of the creditor; defenses of the surety and guarantor.

(Prerequisite, L 13)

2½ semester hours credit

L 15 Business Law III

Partnerships: nature, kinds and formation: rights and duties of partners; partner's authority to bind firm; relation of partners and third persons; dissolution and winding up. Corporations: nature and creation; charter; powers, rights and liabilities; nature and kinds of capital stock; rights and liabilities of stockholders; directors and officers. Mortgages: rights and duties of mortgagor; rights and duties of mortgagee; rights after default. Property: landlord and tenant relationship; classification of tenancies; rights and duties of landlord; rights and liabilities of tenant. Bankruptcy; Federal Bankruptcy Acts; acts of bankruptcy; adjudication; rights and duties of bankrupt; unsecured, secured and priority claims; extensions, compositions, and other debtor-relief provisions; discharge.

(Prerequisite, L 13)

2½ semester hours credit

L 16 Government Controls in Business

A study of the economic and political relationships which exist between business and government with particular reference to the Sherman Act and Anti-Trust Laws; Securities and Exchange Commission; Interstate Commerce Commission; regulation of public utilities; the Co-operative Movement; the Social Security Act; government and labor; business regulation by taxation.

2½ semester hours credit

MARKETING**D 1-2 Marketing**

An understanding of the various methods in common use for selling goods and of the typical problems that arise in the course of distributing goods from the manufacturer through the middlemen and dealers to the consumers is provided. The selling problems of the manufacturer, the wholesaler, the retailer, and the specialty agent are studied in relation to the various types of industries and commodities.

5 semester hours credit

D 3 Principles of Selling

This course deals with the evolution of modern salesmanship, its history, development, and opportunities. The psychology of selling, preparation for the interview, the proper approach, arousing the buying urge, the meeting of sales resistance, the closing of the sale, and the qualities of good salesmen are among the topics discussed.

2½ semester hours credit

D 5 Sales Management

This is a continuation of the course in the Principles of Selling. It includes study of the types of sales organizations, the work of sales executives, sales planning and policies, sales campaigns, management of the sales force, financing of sales, and the control of sales operations.

(Prerequisite, D 3)

2½ semester hours credit

D 6 Sales Promotion

The function of sales promotion; the development of plans and materials for stimulating sales; the consideration of publicity media; the preparation of direct advertising pieces for use among the sales force of the manufacturer or wholesale distributor; functions and uses of direct advertising, direct-mail advertising and radio advertising; the planning of sales campaigns; co-ordinating advertising and sales efforts; the preparation of sales manuals, display techniques, portfolios, etc., for use of the sales force.

(Prerequisites, D 1-2, D 3, D 10)

2½ semester hours credit

D 7 Market Research

This course deals with the techniques of research investigations in the collection and utilization of data relating to the problems of marketing. It includes the planning of mail and field investigations, preparation of material, testing results, interpretation of findings, preparation of reports leading to the development of new products, sales methods or sales areas.

(Prerequisites, D 1-2, Ec 7, Ec 8)

2½ semester hours credit

D 10 Principles of Advertising

A comprehensive course designed to familiarize the student with the nature and scope of advertising and its place in the commercial and economic structure. History, definition, and functions of advertising. Organization and functions of advertising departments and advertising agencies. Varieties of advertising and media. Problems, market investigation, planning campaigns. Laws, ethics, and regulations. A study of the broader aspects of advertising with special emphasis on current trends and developments.

2½ semester hours credit

D 11 Advertising Problems

A course designed to bring to the student the intimate details of planning an advertising campaign; the solving of advertising objectives; and the planning of advertising strategy. Numerous actual case histories are covered in classroom discussion with particular emphasis on the latest advertising trends and practices.

(Prerequisite, D 10)

2½ semester hours credit

D 31 Purchasing

A practical study of the functions and duties of the purchasing agent, the organization and administration of his department, and his relations with other departments. The following are representative of subjects discussed: the purchasing function, qualifications and responsibilities of the purchasing officer; purchasing organization and procedure; quality determination, inspection and inventory control; source selection and procurement by manufacture; price policies, forward buying and procurement budgets.

2½ semester hours credit

D 33 Credit Fundamentals

This course furnishes instruction in the organization and functions of the commercial credit department; the classification of credit and the several types of agencies involved; the factors involved in a credit risk; the investigation of credit factors; credit services.

2½ semester hours credit

OFFICE MANAGEMENT**OM 1 Scientific Management in Office Practice**

This course is intended to provide basic instruction in the tools of modern scientific management, work simplification, time study, job evaluation and merit rating; work simplification as a means of improving work methods and procedures through motion study and process analysis; time study for work measurement and the establishment of standards; and job evaluation for determining the equivalency among the several jobs as a basis for a wage and salary structure. These scientific tools will be applied to office practices. Laboratory exercises will accompany the lectures.

2½ semester hours credit

OM 2 Office Organization and Administration

This course considers the organizational, human, physical, and operational problems encountered by the manager of the modern office. It stresses the importance of the proper place of the office management function in effective company organization; the value of proper selection techniques, supervision, adequate compensation policies, and employee relations in building up an office force with desirable attitudes and abilities. It discusses principles of efficient office layout; working conditions; the analysis of office methods and systems; work simplification; the selection and use of office machines; and common office functions. Every effort is made to use the student's own office background as a sounding board for the subject matter.

2½ semester hours credit

OM 3 Form Design and Control

Forms in their relationship to office systems; forms designing tools, drafting techniques, factors and principles of form design; problems of paper size and quality for specific usage; carbons, typography and printing specifications; forms housing; the design of general and specialized forms including system cards, visible file cards, tickets, bookkeeping and addressing machine forms, carbon interleaved forms, reproduction forms (hectograph and offset processes), strip accounting forms; forms control organization and administration.

2½ semester hours credit

OM 4 Office Systems and Procedures

This course is devoted to the techniques of system design to most effectively record and expedite the operations of the office and/or the factory. It deals with the elements of system analysis; methods of obtaining data and recording of existing procedures; procedure charts and charting techniques; developing, testing, installing and adjusting new systems; measuring effectiveness of the system. Considerable time will be devoted to laboratory analysis of certain recognized systems and for the discussion of design problems submitted by members of the class.

(Prerequisite, OM 3 or equivalent)

2½ semester hours credit

REAL ESTATE

RE 1 Real Estate Fundamentals

This course examines real estate's place in our social economy. The operation and forces of the market itself, and its relation to over-all public interest; it includes land economics and development, the market, building and its problems, building construction, brokerage, starting a real estate business, mortgage lending, remodeling, insurance, planning and zoning, Government Legislation — V.A. Loan Guaranty and Federal Housing Administration insurance on G.I. and non-G.I. Loans.

2½ semester hours credit

RE 2 Real Estate Law and Conveyancing

This course covers the legal processes and instruments used in controlling real estate ownership and transactions involving the acquisition, use, enjoyment, and disposition of real estate and including land titles, estates, contracts, agreements of sale, deeds, mortgages and foreclosures, easements, liens, leases, landlord and tenant relations and liabilities, purchase and sale of real estate, conveyancing, wills and probate, building and zoning laws, and insurance.

(Prerequisite, RE 1)

2½ semester hours credit

RE 11 Real Estate Appraisal — Residential Properties

This course is designed to provide the student with the basic knowledge and tools necessary to enable him to appraise residential properties. Study is made of valuation concepts, the purposes of appraisal; the sources of, collection, and application of data used to prepare appraisals; the use of tables, residual techniques; special purpose properties; the summation and final estimate of value, and the writing of appraisal reports; preparation and presentation of expert court testimony.

(Prerequisites, RE 1, RE 2)

2½ semester hours credit

RE 13 Real Estate Appraisal — Commercial and Industrial Properties

Presented in this course is the analyzing of business neighborhoods, the special appraisal functions, as applied to the following commercial and industrial properties: various types of business properties, retail store properties, heavy and light manufacturing properties, warehouse and waterfront properties, special purpose properties, banks, indoor and outdoor theaters, garages and gasoline stations, office buildings, combination store and offices, hotels, apartment buildings; the appraisal reports.

(Prerequisites, RE 1, RE 2, RE 11)

2½ semester hours credit

PERSONNEL AND INDUSTRIAL RELATIONS

IR 6 Practical Training Methods for Business and Industry

Subjects covered range from principles and methods of effective "on-the-job" training to the handling of formal or informal training groups. The objective is to provide a thorough grounding in the psychology of learning; techniques of effective teaching; personality qualifications for successful training; a review of job instruction training (J. I. T.) and job relations training (J. R. T.); use of the case analysis method; role playing; training tools; visual aids; the value of example and demonstration; methods of analyzing and meeting training needs; the principles and practices of organizing and administering a training program; follow-up procedures to insure results; class projects to provide practical application of material covered in the course.

2½ semester hours credit

IR 7 Industrial Sociology

The social, psychological, and biological factors are interacting forces affecting the behavior of workers. This course in the sociology of work relations attempts to study the worker in terms of his needs, desires and ambitions but also considers him as one of a group in the larger area of group dynamics. It discusses the many significant social adjustments made by the individual throughout his work-life; the sociological aspects of worker selection and placement upon industrial morale and teamwork; the formal organization of management and the unions; the strategy and tactics of union-management bargaining; occupational mobility and security; industry and society.

2½ semester hours credit

IR 8 Techniques of Supervision

Supervision is the function of directing, controlling, and co-ordinating the combined efforts of men, machines and materials. Positions of managerial capacity involve the responsibility of supervision. This course is designed to provide basic instruction in such phases as the supervisor's responsibilities and objectives; planning the work and employee assignments; employee's attitudes toward management, equipment and materials; records and reports; improving individual performance; progress of employees; personnel relations; handling of grievances; training; administering of company policies; matters related to wages; the development of a congenial, enthusiastic community of work interest through the co-ordination of the work of all employees.

2½ semester hours credit

IR 9 Wage Administration

The matters related to the establishment of an effective and equitable wage-payment plan and the administration of the same is of prime importance from the production as well as the labor relations point of view. The course is a comprehensive study of the underlying theory of industrial wages. Specific consideration is given to job and salary analysis and evaluation; merit rating; incentive wages; wage payment plans. The importance of a sound wage structure to healthy employer-employee relations.

2½ semester hours credit

IR 11-12 Personnel Administration — Human Relations

Effective handling of human problems has become a factor of vital importance to management. This course in human relations in business is the foundation to all personnel policy and offers an approach or understanding of value not only to those in personnel work but also to all persons having supervisory relationships. Subjects included for discussion are the techniques of approach to situation analysis; problems in selection; training; employee rating; change of employee status; supervision; wage policies; complaints and grievances; employee morale; labor turnover; discipline; health; safety; employee participation; collective bargaining; public relations.

5 semester hours credit

IR 13 Personnel Management Practices

This course in contrast to IR 11-12 is specifically related to the organization, function, and procedures of the personnel department. It is concerned with such problems as: the organization of the personnel department; its relationship to management; recruitment of manpower; techniques of interviewing and counselling; employee selection; testing; proper job placement; training; job analysis and evaluation; merit rating; promotion, transfer, discharge; employee publications; standards and conditions of employment; personnel forms, records and reports.

2½ semester hours credit

IR 15 Employment Testing

Selection and placement procedures usually comprise several steps including the interview, psychometric testing, references, etc., all of which are fitted together to form an over-all judgment. This course is concerned with tests used in business and industry to determine aptitudes, personal characteristics and qualifications for employment, proper job placement, counselling, promotion, special training, supervisory or executive potentialities. It discusses tests in terms of type and purpose, test characteristics, test construction, test interpretation, use and limitations of testing.

2½ semester hours credit

IR 22 Labor-Management Relations

This course provides a basic treatment of labor economics, including the history of the labor movement and of industrial relations, with emphasis on the present period; theory of collective bargaining; effects of collective bargaining upon income of labor, employment, accumulation of capital, and national income. Policies and practices of labor and management in respect to hiring and layoffs, technological changes, wages and market position, closed and open shop, union-management co-operation, government regulation of labor relations, etc. The problem of strikes and lockouts. Public policy as to industrial relations.

2½ semester hours credit

IR 24 Labor Legislation — Standards and Conditions of Employment

A course comparing and contrasting Federal and State laws which affect the worker in his daily employment by regulating minimum wages, maximum wage ceiling and related wage regulation; hours, overtime pay, and child labor. It also discusses Federal Old Age and Survivors Insurance, Unemployment Insurance, Workmen's Compensation, Veterans' Re-employment Rights, and Fair Employment Practices Acts.

(Prerequisite, IR 22)

2½ semester hours credit

IR 23 Labor Legislation — Union-Management Relations

Government and Labor-Management Relations and the development of labor legislation. The purpose, policy and jurisdiction of the National Labor Relations Act, as amended by the Taft-Hartley Act. A detailed study of the Labor-Management Relations Act, 1947 (Taft-Hartley Act). The Fair Labor Standards Act of 1938 (Wage and Hour Law) as amended by the Portal-to-Portal Act of 1947. Consideration of the procedures, powers, and limitations of the agencies administering the statutes.

(Prerequisite, IR 22)

2½ semester hours credit

IR 25 The Labor Agreement — Negotiation and Administration

The negotiation, re-negotiation, and administration of labor contracts; study of the component clauses such as union recognition and security, management prerogatives, seniority, vacations, wages, hours, working conditions; grievance analysis and arbitration procedure developed through case studies in actual labor-management relations as affected by such clauses, and the entire collective bargaining agreement.

(Prerequisite, IR 22)

2½ semester hours credit

A fee of five dollars must accompany this application. Make checks, money orders, or drafts payable to Northeastern University. This fee is not refundable.

Received by

Date.....

360 Huntington Avenue, Boston 15, Mass.

To the Director:

Mrs.

I (Print name in full) Miss.

(Middle)

(Last)

hereby apply for admission to the Evening Courses of the College of Liberal Arts.

I plan to take the program checked below, and wish to enter with the term beginning.....195...
month

□ Special Courses

☐ Labor Relations☐ B.B.A. Degree in Liberal Arts and Business

☐ I do not intend to continue in the Day Division to complete the requirements for the A.B. or S.B. degree if circumstances permit.

To enable you to determine my eligibility for admission I am furnishing the following information:

Address: Street:

City.....Residence Telephone.....

Employed by:

Company..... Address..... City.....

Date of birth:

Age..... years.

mos.....

Name and address of parent or guardian if under 21 years of age.....

FILL OUT IN PENCIL

I have attended the following schools above the eighth grade. (Include other schools of the Northeastern University System and if you have attended other universities designate the school.)

NAME OF SCHOOL	LOCATION — CITY, STATE	Check Years Attended				Year Left	Year of Graduation	Degree if any
		1	2	3	4			

Course taken in high school (college, general, etc.)
I request advanced standing credit and will furnish transcript for previous college work completed at.....

For information relative to my character and general ability, I refer you to the following person who is not a student or relative:

Name.....Street.....

City.....State.....Occupation.....

I first learned of Northeastern University through.....

Following is the name and address of the person who recommended that I enter the University.....

.....
Usual signature.....

Approved for admission as a special student with.....units credited.
regular

.....Date.....
Director

NORTHEASTERN UNIVERSITY

COEDUCATIONAL

College of Liberal Arts

Offers a broad program of college subjects serving as a foundation for the understanding of modern culture, social relations, and technical achievement. Varied opportunities available for vocational specialization. Degree: Bachelor of Science or Bachelor of Arts.

College of Engineering

Offers curricula in Civil, Mechanical (with Industrial and Aeronautical options), Electrical, and Chemical Engineering. Classroom study is supplemented by experiment and research in well-equipped laboratories. Degree: Bachelor of Science in the professional field of specialization.

College of Business Administration

Offers curricula in Accounting, Industrial Relations, Marketing and Advertising, Finance and Insurance, and Business Management. Each curriculum represents in itself a broad survey of business technique, differing from the others chiefly in emphasis. Degree: Bachelor of Science in Business Administration.

School of Law

Offers day and evening undergraduate programs admitting those who present a minimum of one-half of the work accepted for a bachelor's degree in an approved college or its full equivalent, each program leading to the degree of Bachelor of Laws, and a graduate program leading to the degree of Master of Laws.

School of Business

Offers curricula through evening classes leading to the degree of Bachelor of Business Administration with appropriate specification in Accounting, Management, and Engineering and Business. Preparation for C.P.A. examinations. Intensive programs arranged to meet special needs. Certificate programs in the Labor Relations Institute, the Institute of Retailing and the Office Management Institute.

Evening Courses of the College of Liberal Arts

Certain courses of the College of Liberal Arts are offered during evening hours in the fields of Economics, English, History, Government, Psychology, and Sociology leading to the Associate in Arts Degree. Combined programs in Liberal Arts and Business are available awarding the degree of Bachelor of Business Administration with specification. A special program preparing for admission to the School of Law is also available. Special programs may be arranged through consultation with the Dean.

The Colleges of Liberal Arts, Engineering, and Business Administration offer day programs and are conducted on the Co-operative Plan. After the freshman year students may alternate their periods of study with periods of work in the employ of business or industrial concerns. Under this plan they gain valuable experience and earn a large part of their college expenses. Full-time curricula are available for students who do not desire the Co-operative Plan.

In addition to the above schools the University has affiliated with it and conducts: the Lincoln Technical Institute offering, through evening classes, courses of college grade in various fields of engineering leading to the degree of Associate in Engineering; and the Lincoln Preparatory School, an accredited evening school preparing for college entrance and offering other standard high school programs.

For further information regarding any of the above schools, address

NORTHEASTERN UNIVERSITY

Law School

47 Mt. Vernon Street

Other Schools

360 Huntington Avenue

Boston 15, Massachusetts
Telephone : COpley 7-6600

5M-5-52



NORTHEASTERN UNIVERSITY

COLLEGE OF
ENGINEERING

Graduate Division

BULLETIN

1952-1953



EVENING GRADUATE PROGRAMS

BOSTON 15, MASSACHUSETTS

MAY, 1952

Dates of Interview Periods and Regular Sessions

<i>Year</i>	<i>Session</i>	<i>Interview Period</i>	<i>Regular Session</i>
1951-1952	Summer	May 12-May 24	June 2-Aug. 1
1952-1953	Fall	Aug. 25-Sept. 6	Sept. 15-Jan. 23
	Winter	Jan. 12-Jan. 24	Feb. 2-May 29
	Summer	May 18-May 29	June 8-Aug. 7

Office Hours

INTERVIEW PERIODS: Monday through Friday 8:45 a.m.- 7:00 p.m.
Saturdays 9:00 a.m.-12:00 noon

OTHER TIMES: Monday through Friday 8:45 a.m.- 5:00 p.m.

The office is closed on all legal holidays.

Gifts and Bequests

Northeastern University will welcome gifts and bequests for the following purposes:

- (a) For its building program.
- (b) For general endowment.
- (c) For specific purposes which may especially appeal to the donor.

It is suggested that, when possible, those contemplating gifts or bequests confer with the President of the University regarding the University's needs before legal papers are drawn.

Gifts and bequests should be made only in the University's legal name, which is "Northeastern University."

Requests for Bulletins and information about graduate work in the Graduate Division should be addressed to

Director of Engineering Graduate Study

Northeastern University

360 Huntington Ave., Boston 15, Mass.

OFFICE: 140 Richards Hall COpley 7-6600

NORTHEASTERN UNIVERSITY

COLLEGE OF
ENGINEERING
Graduate Division
BULLETIN

1952-1953



Evening Graduate Programs

Leading to the Degree of Master of Science

BOSTON 15, MASSACHUSETTS
MAY, 1952

Table of Contents

	<i>Page</i>
ACADEMIC CALENDAR	3
ADMINISTRATIVE ORGANIZATION	
The Northeastern University Corporation	5
Administrative Officers of the Graduate Division	6
Committee on Engineering Graduate Study	6
Administrative Staff	6
Teaching Staff	6
GENERAL INFORMATION	
History and Objectives of the Graduate Division	9
Requirements for Admission to Graduate Courses	9
Classification of Graduate Students in the Graduate Division	10
Requirements for Admission to Candidacy for a Master's Degree	10
Requirements for the Degree of Master of Science	10
Transfer of Credits, Study Load, Grades, Theses	11
Tuition and Fees, Veterans	12
Class Hours, Instructional Calendar	12
Interview and Registration Dates, Office Hours, and Class Schedules	12
Curriculum Requirements for the Degree of Master of Science	13
Summary of Graduate Courses	16
DESCRIPTION OF GRADUATE COURSES	
Civil Engineering	19
Mechanical Engineering	24
Electrical Engineering	28
Chemical Engineering	33
Chemistry	34
Mathematics	36
Physics	39
LIST OF COURSES TO BE OFFERED IN 1952-1953	42

Academic Calendar

May 1952—August 1953

The Graduate Division of the College of Engineering of Northeastern University maintains three sessions during the year: The Fall Session beginning in September and ending in January; the Winter Session, beginning in January and ending in May; and the Summer Session of nine weeks, beginning in June and ending in August.

1952

May	12	MONDAY: Interview and registration period for 1952 Summer Session begins
May	16	FRIDAY: Last day of classes in Winter Session
May	19	MONDAY: First day of week of final examinations for Winter Session
May	23	FRIDAY: 1952 Winter Session ends
May	24	SATURDAY: Interview period for 1952 Summer Session ends
May	30	FRIDAY: Memorial Day. Holiday
June	2	MONDAY: 1952 Summer Session begins
June	3	TUESDAY: Last day for registration in Summer Session
june	22	SUNDAY: Commencement
July	4	FRIDAY: Independence Day. Holiday
July	25	FRIDAY: Last day of classes in Summer Session
July	28	MONDAY: First day of week of final examinations for Summer Session
August	1	FRIDAY: 1952 Summer Session ends
August	25	MONDAY: Interview and registration period for 1952-1953 Fall Session begins
September	1	MONDAY: Labor Day. Holiday
September	6	SATURDAY: Interview period for Fall Session ends
September	15	MONDAY: 1952-1953 Fall Session begins
September	19	FRIDAY: Last day for registration in Fall Session
October	13	MONDAY: Columbus Day. Holiday
November	11	TUESDAY: Armistice Day. Holiday
November	27	THURSDAY: Thanksgiving Day. Holiday
December	19	FRIDAY: Classes for all students will end at 9:00 p.m. and reconvene on January 5, 1953

Academic Calendar (Continued)

1953

- | | | |
|-----------------|----|--|
| <i>January</i> | 5 | MONDAY: Classes resume as usual |
| <i>January</i> | 12 | MONDAY: Interview and registration period for Winter Session begins |
| <i>January</i> | 16 | FRIDAY: Last day of classes in Fall Session |
| <i>January</i> | 19 | MONDAY: First day of week of final examinations for Fall Session |
| <i>January</i> | 23 | FRIDAY: <i>Fall Session ends</i> |
| <i>January</i> | 24 | SATURDAY: Interview period for Winter Session ends |
| <i>February</i> | 2 | MONDAY: <i>1953 Winter Session begins</i> |
| <i>February</i> | 6 | FRIDAY: Last day for registration in Winter Session |
| <i>February</i> | 23 | MONDAY: Observance of Washington's Birthday. Holiday |
| <i>April</i> | 20 | MONDAY: Observance of Patriots' Day. Holiday |
| <i>May</i> | 18 | MONDAY: Interview and registration period for 1953 Summer Session begins |
| <i>May</i> | 22 | FRIDAY: Last day of classes in Winter Session |
| <i>May</i> | 25 | MONDAY: First day of week of final examinations for Winter Session |
| <i>May</i> | 29 | FRIDAY: <i>1953 Winter Session ends</i> |
| <i>May</i> | 29 | FRIDAY: Interview period for 1953 Summer Session ends |
| <i>May</i> | 30 | SATURDAY: Memorial Day. Holiday |
| <i>June</i> | 8 | MONDAY: <i>1953 Summer Session begins</i> |
| <i>June</i> | 9 | TUESDAY: Last day for registration in Summer Session |
| <i>June</i> | 21 | SUNDAY: Commencement |
| <i>July</i> | 4 | SATURDAY: Independence Day. Holiday |
| <i>July</i> | 31 | FRIDAY: Last day of classes in Summer Session |
| <i>August</i> | 3 | MONDAY: First day of week of final examinations for Summer Session |
| <i>August</i> | 7 | FRIDAY: <i>1953 Summer Session ends</i> |

The Northeastern University Corporation

ROBERT GRAY DODGE, *Chairman*
FRANK LINCOLN RICHARDSON, *Vice-Chairman*
CARL STEPHENS ELL, *President of the University*
ROBERT GREENOUGH EMERSON, *Treasurer*
EVERETT AVERY CHURCHILL, *Secretary*

JOSEPH FLORENCE ABBOTT
CHARLES FRANCIS ADAMS
O. KELLEY ANDERSON
HENRY NATHANIEL ANDREWS
FREDERICK AYER
ARTHUR ATWOOD BALLANTINE
GEORGE LOUIS BARNES
THOMAS PRINCE BEAL
FARWELL GREGG BEMIS
SAMUEL BRUCE BLACK
JOHN S. BOTTOMLY
RICHARD L. BOWDITCH
GEORGE R. BROWN
GEORGE AUGUSTUS BURNHAM
GODFREY LOWELL CABOT
ELMER T. CARLSON
WALTER CHANNING
WILLIAM CONVERSE CHICK
ROBERT B. CHOATE
PAUL FOSTER CLARK
GEORGE HENRY CLIFFORD
ALBERT MORTON CREIGHTON
ROBERT CUTLER
MARSHALL BERTRAND DALTON
EDWARD DANA
EDWARD DANE
RALPH MEAD DARRIN
CARL PULLEN DENNETT
FREDERICK J. DILLON
DAVID FRANK EDWARDS
WILLIAM PARTRIDGE ELLISON
WALLACE FALVEY
JOHN WELLS FARLEY
JOSEPH FABIAN FORD
NOBLE FOSS
ERNEST BIGELOW FREEMAN
JOHN L. GRANDIN, JR.
MERRILL GRISWOLD
H. FREDERICK HAGEMANN, JR.
GEORGE HANSEN
CHRISTIAN A. HERTER
CHARLES E. HODGES
HAROLD DANIEL HODGKINSON
HARVEY P. HOOD
CHANDLER HOVEY
HOWARD MUNSON HUBBARD
MAYNARD HUTCHINSON
RAY E. JOHNS
CHARLES BERKLEY JOHNSON
JACOB JOSEPH KAPLAN
MICHAEL T. KELLEHER
HARRY HAMILTON KERR

EDWARD A. LARNER
JOHN E. LAWRENCE
GALEN DAVID LIGHT
RALPH LOWELL
WILLARD BLACKINTON LUTHER
EDWARD ABBOTT MACMASTER
HAROLD FRANCIS MASON
JAMES FRANKLIN McELWAIN
HUGH DEAN McLELLAN
EDWARD R. MITTON
IRWIN LIKELY MOORE
IRA MOSHER
IRVING EDWIN MOULTROP
GEORGE S. MUMFORD, JR.
EDWARD ABRAHAM NATHANSON
HARLAN PAGE NEWTON
JOHN T. NOONAN
GEORGE OLMSTED, JR.
AUGUSTIN HAMILTON PARKER, JR.
THEODORE ROOSEVELT PEARY
EDWARD DANA PHINNEY
FREDERICK SANFORD PRATT
ROGER PRESTON
STUART CRAIG RAND
WILLIAM McNEAR RAND
NEAL RANTOUL
JAMES LORIN RICHARDS
JAMES C. RICHDALE
HAROLD BOURS RICHMOND
CHARLES FOREST RITTENHOUSE
LEVERETT SALTONSTALL
RUSSELL MARYLAND SANDERS
RALPH T. SAYLES
ANDREW SEBASTIAN SEILER
GIFFORD K. SIMONDS, JR.
JOSEPH P. SPANG, JR.
FRANK PALMER SPEARE
F. R. CARNEGIE STEELE
CHARLES STETSON
ABBOT STEVENS
EARL PLACE STEVENSON
ROBERT GREGG STONE
ROBERT T. P. STORER
FRANK HORACE STUART
RALPH EMERSON THOMPSON
ELIOT WADSWORTH
SAMUEL WAKEMAN
EUSTIS WALCOTT
HAROLD JOHN WALTER
EDWIN S. WEBSTER, JR.
EDWARD A. WEEKS, JR.
SINCLAIR WEEKS

Administrative Officers of the Graduate Division

CARL STEPHENS ELL, A.B., M.S., Ed.M., Sc.D., LL.D., *President of the University*
 FRANK PALMER SPEARE, M.H., LL.D., *President Emeritus of the University*
 EVERETT AVERY CHURCHILL, A.B., Ed.D., *Vice-President of the University*
 WILLIAM CROMBIE WHITE, S.B., Ed.M., *Director of the Day Colleges*
 WILLIAM THURLOW ALEXANDER, S.B., M.A., *Dean of the College of Engineering*
 HERBERT KAPFEL BROWN, A.B., M.A., Ph.D., *Director of Engineering Graduate Study*

Committee on Engineering Graduate Study

CHARLES OLAVI AHONEN, B.S., M.S., Ph.D., *Associate Professor of Physics*
 WILLIAM THURLOW ALEXANDER, S.B., M.A., *Dean of Engineering, Professor of Industrial Engineering and Chairman of the Department*
 CHESTER PACKARD BAKER, S.B., M.A., *Professor of Chemical Engineering and Chairman of the Department*
 HERBERT KAPFEL BROWN, A.B., M.A., Ph.D. (Chairman), *Associate Professor of Mechanical Engineering and Director of Engineering Graduate Study*
 ALFRED JOHN FERRETTI, S.B., M.S., *Professor of Mechanical Engineering and Chairman of the Department*
 EMIL ANTON GRAMSTORFF, S.B., M.S., *Professor of Civil Engineering and Chairman of the Department*
 REGINALD GAGE LACOUNT, S.B., M.A., Ph.D., *Professor of Physics and Chairman of the Department*
 ROLAND GUYER PORTER, B.E.E., M.S., *Professor of Electrical Engineering and Chairman of the Department*
 JOSEPH SPEAR, A.B., M.A., *Professor of Mathematics and Chairman of the Department*
 ARTHUR ANDREW VERNON, S.B., M.S., Ph.D., *Professor of Chemistry and Chairman of the Department*
 WILLIAM CROMBIE WHITE, S.B., Ed.M., *Director of the Day Colleges*

Administrative Staff

DAISY MILNE EVERETT, <i>Bursar</i>	Office:	116 Richards Hall
MARY B. FOOR, <i>Manager of Bookstore</i>	Office:	41 Richards Hall
ROBERT E. LANG, <i>Director of Veterans and Student Accounts</i>	Office:	250 Richards Hall
RUDOLPH M. MORRIS, <i>Registrar</i>	Office:	254 Richards Hall
PAUL R. SPINNEY, <i>Director of Veterans Affairs</i>	Office:	250 Richards Hall
J. KENNETH STEVENSON, <i>Supervisor of Buildings and Grounds</i> ..	Office:	156 Richards Hall
MYRA WHITE, <i>Librarian</i>	Office:	Library

Teaching Staff

The teaching staff of the Graduate Division is drawn in part from the regular full-time faculty of the College of Engineering of Northeastern University, in part from the faculties of neighboring institutions, and in part from among engineers in practice. Each course is designed to serve a particular purpose and is placed under the leadership of an instructor with special qualifications to handle the subject matter most effectively. The composition of the teaching staff during any particular school year is dependent upon the courses offered during that year. The following men have taught in the Graduate Division:

- RICHARD B. ADLER, *Assistant Professor of Electrical Communications*,
Massachusetts Institute of Technology, Cambridge, Massachusetts
- CHARLES O. AHONEN, *Associate Professor of Physics*,
Northeastern University, Boston, Massachusetts (as of Sept., 1952)
- EDWARD R. ATKINSON, *Group Leader*,
Dewey and Almy Chemical Company, Cambridge, Massachusetts
- ROBERT F. BLANKS, *Chief Engineer, Research and Geology Division*,
U. S. Bureau of Reclamation, Denver, Colorado
- OSCAR S. BRAY, *Project Engineer*,
Jackson and Moreland, Inc., Boston, Massachusetts
- EDWARD BRICKETT, *Field Engineer*,
Dewey and Almy Chemical Company, Cambridge, Massachusetts
- HERBERT K. BROWN, *Associate Professor of Mechanical Engineering*,
Northeastern University, Boston, Massachusetts
- DONALD P. CAMPBELL, *Assistant Professor of Electrical Engineering*,
Massachusetts Institute of Technology, Cambridge, Massachusetts
- HAROLD G. CARTER, *Metallurgist*,
Watertown Arsenal, Watertown, Massachusetts
- SZE-HOU CHANG, *Research Professor in Communications*,
Northeastern University, Boston, Massachusetts
- JOHN A. CLARK, *Assistant Professor of Mechanical Engineering*,
Massachusetts Institute of Technology, Cambridge, Massachusetts
- IRVIN S. COHEN, *Assistant Professor of Mathematics*,
Massachusetts Institute of Technology, Cambridge, Massachusetts
- NEAL J. DEAN, *Research Engineer, Electronics*,
Laboratory for Electronics, Boston, Massachusetts
- MARTIN W. ESSIGMANN, *Associate Professor of Electrical Engineering*,
Northeastern University, Boston, Massachusetts
- ALFRED J. FERRETTI, *Professor of Mechanical Engineering*,
Northeastern University, Boston, Massachusetts
- ROYAL M. FRYE, *Professor of Physics and Head of the Department*,
Simmons College, Boston, Massachusetts
- LOUIS E. GARONO, *Engineering Superintendent, Atlantic Gelatin Division*,
General Foods Corporation, Winchester, Massachusetts
- NORMAN J. GOLDEN, *Senior Engineer*,
Sylvania Electric Products, Inc., Boston, Massachusetts
- WILLIAM E. GORDON, *Research Head*,
Arthur D. Little, Inc., Boston, Massachusetts
- BRUCE HAINSWORTH, *Sales Promotion Engineer*,
The Foxboro Company, Foxboro, Massachusetts
- JAMES F. HALEY, *Engineer*,
U. S. Corps of Engineers, Boston, Massachusetts
- JAMES M. HAM, *Assistant Professor of Electrical Engineering*,
Massachusetts Institute of Technology, Cambridge, Massachusetts
- SAMUEL L. HENSEL, *Assistant Professor of Chemical Engineering*,
Northeastern University, Boston, Massachusetts
- THOMAS HEWSON, *Project Engineer*,
Lessells and Associates, Boston, Massachusetts

- FRANCIS B. HILDEBRAND, *Associate Professor of Mathematics*,
Massachusetts Institute of Technology, Cambridge, Massachusetts
- JACOB JURMAIN, *Research Engineer*,
Baird Associates, Cambridge, Massachusetts
- HENRY L. KENNEDY, *Manager, Cement Division*,
Dewey and Almy Chemical Company, Cambridge, Massachusetts
- M. FRANK KNOY, *Chief Technical Engineer*,
Boston Consolidated Gas Company, Boston, Massachusetts
- EDWARD F. LOBACZ, *Engineer*,
U. S. Corps of Engineers, Boston, Massachusetts
- SAMUEL J. MASON, *Assistant Professor of Electronic Engineering*,
Massachusetts Institute of Technology, Cambridge, Massachusetts
- FRANCIS J. MARDULIER, *Field Engineer*,
Dewey and Almy Chemical Company, Cambridge, Massachusetts
- JOSEPH MCCARTHY, *Sanitary Engineer*,
Lawrence Experiment Station, Lawrence, Massachusetts
- TITUS E. MERGENDAHL, *Professor of Applied Mathematics*,
Tufts College, Medford, Massachusetts
- ROBERT R. MOATS, *Senior Engineer*,
Sylvania Electric Products, Inc., Boston, Massachusetts
- H. CARLTON MOORE, *Senior Mechanical Engineer*,
Metcalf and Eddy, Boston, Massachusetts
- ARCHIE PERUGI, *Research Engineer*,
General Electric Company, Lynn, Massachusetts
- THOMAS L. PHILLIPS, *Servo and Electronic Engineer*,
Raytheon Manufacturing Company, Newton, Massachusetts
- GEORGE E. PIHL, *Associate Professor of Electrical Engineering*,
Northeastern University, Boston, Massachusetts
- MELVILLE E. PRIOR, *Chief Engineer, Concrete Research and Development Laboratory*,
Dewey and Almy Chemical Company, Cambridge, Massachusetts
- WILBUR L. PRITCHARD, *Senior Engineer, Section Head*,
Raytheon Manufacturing Company, Newton, Massachusetts
- ROBERT J. PROWSE, *Design Engineer*,
State of New Hampshire, Concord, New Hampshire
- J. FRANCIS REINTJES, *Assistant Professor of Electrical Communications*,
Massachusetts Institute of Technology, Cambridge, Massachusetts
- JAMES B. RESWICK, *Assistant Professor of Mechanical Engineering*,
Massachusetts Institute of Technology, Cambridge, Massachusetts
- FRANK E. RICHART, *Assistant Professor of Mechanical Engineering*,
Harvard University, Cambridge, Massachusetts
- JOHN S. ROCHEFORT, *Electronics Research Associate*,
Northeastern University, Boston, Massachusetts
- WARREN M. ROHSENOW, *Assistant Professor of Mechanical Engineering*,
Massachusetts Institute of Technology, Cambridge, Massachusetts
- BARNET ROSENTHAL, *Senior Chemist*,
Lawrence Experiment Station, Lawrence, Massachusetts
- RONALD E. SCOTT, *Assistant Professor of Electronic Engineering*,
Massachusetts Institute of Technology, Cambridge, Massachusetts
- ERNEST SPENCER, *Associate Professor of Civil Engineering*,
Northeastern University, Boston, Massachusetts
- HAROLD L. STUBBS, *Mathematician*,
Northeastern University, Boston, Massachusetts
- GEORGE B. THOMAS, *Associate Professor of Mathematics*,
Massachusetts Institute of Technology, Cambridge, Massachusetts
- KENTARO TSUTSUMI, *Project Engineer*,
Jackson and Moreland, Inc., Boston, Massachusetts
- ROCCO H. URBANO, *Mathematician*,
Air Force Cambridge Research Laboratories, Cambridge, Massachusetts
- WILLIAM WALLACE, *Assistant Professor of Mathematics*,
Northeastern University, Boston, Massachusetts
- AN WANG, *Engineer*,
Wang Laboratories, Boston, Massachusetts

History and Objectives of the Graduate Division

In September, 1948, the College of Engineering of Northeastern University initiated a group of evening courses at the graduate level. The enthusiastic response to these exploratory courses indicated clearly that they met a need in the community that had not been served before.

The substantial enrollment during the 1949-1950 school year encouraged the College of Engineering to establish the Graduate Division and to initiate in September, 1950, evening graduate curricula leading to the degree of Master of Science in certain fields of civil, mechanical, and electrical engineering.

In order to provide wider opportunities for the professional development of its students, the Graduate Division has broadened its programs and, beginning in September, 1952, it will be possible to pursue degree-granting curricula in the fields of Sanitary-Hydraulics engineering, Electric Power engineering, and in Mathematics-Physics, in addition to the curricula already established. The graduate course offerings in Mathematics, Physics, and Chemistry have also been considerably enlarged.

The program of graduate study at Northeastern University is designed specifically for students who wish to carry on advanced study on a part-time basis while continuing with their regular employment. The courses and curricula of the Graduate Division have been planned to provide the student with a training which emphasizes the fundamentals which are basic to all branches of engineering and science. Accordingly, the courses present particularly the analytical methods used in solving various types of modern technological problems, without, however, neglecting altogether those considerations necessary for practical applications.

Requirements for Admission to the Graduate Division

The evening graduate courses in the Graduate Division are designed for persons who already hold a bachelor's degree from an accredited institution in some field of engineering or science. Persons who do not hold a bachelor's degree, but who are otherwise qualified by reason of their training and experience to profit from the instruction given, will also be permitted to enroll as special students.

Students will be admitted to evening graduate courses only after they have been personally interviewed by the Director of Graduate Study, who will decide whether the applicant may be enrolled. The purpose of the interview is to determine as far as possible whether the prospective enrollee has the necessary background to handle successfully the work of the course.

Classification of Students

All students in the Graduate Division of the College of Engineering are classified in one of three categories:

- (1) Special Students — those who are interested in and eligible for certain specific courses.
- (2) Regular Students — those who have a baccalaureate degree in some field of engineering or science from an accredited institution and who intend to pursue a degree-granting curriculum.
- (3) Master's Degree Candidates — those regular students who have successfully completed eight semester hours of graduate work at Northeastern University and whose transcripts of records and letters of recommendation warrant their being enrolled as candidates for the master's degree.

Requirements for Admission to Candidacy for a Master's Degree

Admission to a course or courses does not constitute acceptance as a candidate for a master's degree.

All students when first accepted by the Director for enrollment in the graduate courses are classified as either special or regular students.

Those students with the baccalaureate degree from an accredited institution who desire to become regular graduate students and pursue a degree-granting curriculum should inform the Director of their intention at the time of the interview so that a tentative program of graduate study may be made for each regular student.

When such a regular student has successfully completed eight semester hours of graduate work at Northeastern, he is then eligible to become a candidate for a master's degree. In order to become a candidate the student must file formal application therefor accompanied by a five-dollar matriculation fee.

The student must then present to the Graduate Division a transcript of his records at the institution from which he received the baccalaureate degree and at other institutions where he may have been enrolled. In addition, letters of recommendation may be requested from persons familiar with the applicant's education and experience. All this information will be evaluated by the Director and by the department in which the student elects his principal studies. Upon their recommendation, the student will be enrolled as a candidate for the master's degree.

Requirements for the Degree of Master of Science

Upon admission to candidacy for the master's degree in a specified curriculum, an integrated program for the future work to satisfy the degree requirements must be laid out and approved by the head or representative of the department concerned and the Director of Graduate Study.

A total of thirty semester hours is required for the degree of Master of Science. Of these, at least sixteen are prescribed by the department sponsoring the degree; the remaining fourteen are elective, the student choosing those which best serve his purpose. The subjects selected must be correlated into the approved program, indicating a definite objective. The major objective of the approved program may be one of penetration and specialization in a given field, or it may be one of breadth of training in a general field at a high professional level. In each case the student must be able to comply with the prerequisites established for each course. Changes in a student's approved program may be made only upon approval of the major department and of the Director of Graduate Study.

Transfer of Credits, Study Load, Grades, Theses

Not more than eight semester hours of graduate credit may be transferred from other institutions toward the degree of Master of Science at Northeastern. Grades in courses offered for transfer must be B or higher. Acceptance of credits for transfer will not be approved until the student is admitted to candidacy, and then only if the work submitted for transfer credit is consonant with the objective of the approved program.

All graduate students are limited to a program of four semester hours of course work per semester unless granted special permission by the Committee on Engineering Graduate Study to carry a heavier course load. Thus, those who carry two evenings a week (four semester hours of course work) continuously for both semesters will complete the requirements of thirty semester hours for the degree within four years. Some students may find it possible to shorten this period to three years by enrolling in the Summer Sessions.

Course credits earned on the program of graduate study are valid for a maximum period of eight years.

The academic average of the grades earned in the thirty semester hours of work required for the master's degree must be B or better, with no grade below C. The College of Engineering uses a five-point grading scale in which A represents outstanding achievement, B above average achievement, C average achievement, D below average achievement, and F failure. Any student who does not maintain a B average in evening graduate courses may be refused the privilege of further graduate registration.

Theses are not required since such projects are seldom feasible in evening curricula. Only under special circumstances will a student be permitted to undertake a thesis in lieu of a portion of his course work. In each case it must be clearly indicated that the thesis work is an integral part of the student's approved program and it must have the prior approval of the department concerned and the Director of Graduate Study. When thesis work is undertaken, the student registers for the thesis and pays at the rate of the regular semester hour charge.

Tuition and Fees, Veterans

The charge for tuition is at the rate of \$20 per semester hour, or \$40 per half-year course. Students who desire to matriculate for the Master of Science degree also pay an application fee of \$5 when they apply and a diploma fee of \$15 at the time of graduation.

Since instructional arrangements are made on a semester basis, in general there are no refunds after a class has begun. Tuition must be paid before the end of the first week of instruction each semester.

Veterans who are eligible for educational benefits from the Veterans Administration should get in touch with the Veterans Office, Room 250, Richards Hall, at least two weeks before registration if the Veterans Administration is to bear the cost of their tuition and textbooks. Veterans are urged to visit this office even earlier than this if possible in order to insure clearance of their papers with the Veterans Administration by the time the course starts.

Class Hours, Instructional Calendar

In the Fall and Winter Sessions each course meets one evening per week from 7:00 to 9:00 p.m. (except when stated otherwise) throughout the semester, which consists of sixteen class periods and one week devoted to examinations. In the Summer Session each course meets two evenings per week from 7:00 to 9:00 p.m. for a period of eight weeks followed by one week devoted to examinations. For opening and closing dates of these sessions, consult the Academic Calendar on page 3 of this Bulletin.

Interview and Registration Dates, Office Hours, and Class Schedules

For dates of the interview and registration periods and office hours, consult the Academic Calendar and the back of the front cover. The registration circulars issued in August, December, and April provide information regarding class meeting times, room assignments, and teaching staff as well as listing the course offerings for the Fall, Winter, and Summer Sessions, respectively. Copies of these circulars may be obtained from the Office of the Director of Engineering Graduate Study, Northeastern University, Boston 15, Massachusetts, or by calling COpley 7-6600.

Curriculum Requirements

for the Degree of Master of Science

A summary of the specific curriculum requirements for the degree of Master of Science is listed for each curriculum. The Director of Graduate Study will be glad to confer with students in regard to their individual needs in order that they may select courses of study that will be most helpful to them. Students who desire to pursue a degree program should consult the section in this Bulletin on "Requirements for Admission to Candidacy for a Master's Degree" and also the section on "Requirements for the Degree of Master of Science."

Civil Engineering

Curriculum Requirements for the Degree of Master of Science in Civil Engineering

Required Courses: (16 Semester Hours)

(1) STRUCTURES MAJOR		(2) SANITARY-HYDRAULICS MAJOR	
	Sem. Hrs.		Sem. Hrs.
G1.401, 402, 403		G1.201, 202	
Indeterminate Structures.....	6	Sanitary Engineering.....	4
		G1.203	
		Sanitary Chemistry.....	2
G1.503, 504, 505		G1.204	
Soil Mechanics.....	6	Sanitary Bacteriology.....	2
		G1.205	
		Sanitary Analysis (Lab).....	4
G1.601, 602		G1.206	
Design of Structures.....	4	Sanitary Laboratory.....	4
	<u>16</u>		<u>16</u>

Elective Courses: (14 semester hours may be elected from among the following or other evening graduate courses)

(1) STRUCTURES MAJOR		(2) SANITARY-HYDRAULICS MAJOR	
	Sem. Hrs.		Sem. Hrs.
G1.213, 214		G1.207	
Hydrology.....	4	Microscopy of Water.....	2
G1.501, 502			
Cement & Concrete Tech.....	4	G1.208	
G1.701		Industrial Waste.....	2
Contracts, Specifications,			
Valuation.....	2	G1.209	
G2.200		Stream Sanitation.....	2
Adv. Mechanics of Materials.....	2		
G2.201, 202		G1.210	
Theory of Elasticity.....	4	Public Health Engineering.....	2
G2.203, 204			
Elastic Stability.....	4	G1. 211, 212	
G2.213, 214		Advanced Hydraulics.....	4
Advanced Dynamics.....	4		
G14.101, 102		G1.213, 214	
Advanced Mathematics.....	4	Hydrology.....	4

Mechanical Engineering

Curriculum Requirements for the Degree of Master of Science in Mechanical Engineering

Required Courses: (16 Semester Hours)

(1) MECHANICS MAJOR		(2) HEAT POWER MAJOR	
	Sem. Hrs.		Sem. Hrs.
G2.201, 202		G2.301, 302	
Theory of Elasticity.....	4	Heat Transfer.....	4
G2.213, 214		G2.311, 312	
Advanced Dynamics.....	4	Advanced Thermodynamics.....	4
G14.101, 102		G2.501, 502	
Advanced Mathematics.....	4	Power Plant Economics.....	4
G15.101, 102		G14.101, 102	
Theoretical Physics.....	4	Advanced Mathematics.....	4
	<u>16</u>		<u>16</u>

Elective Courses: (14 semester hours may be elected from among the following or other evening graduate courses)

(1) MECHANICS MAJOR		(2) HEAT POWER MAJOR	
	Sem. Hrs.		Sem. Hrs.
G2.203, 204		G2.401, 402	
Elastic Stability.....	4	Pumps, Fans.....	4
G2.205		G2.411, 412	
Experimental Stress Analysis.....	2	Gas Turbines.....	4
G2.211, 212		G2.511, 512	
Vibration Theory & Application.....	4	Power Plant Design.....	4
G2.221, 222		G2.601	
Fluid Mechanics.....	4	Refrigeration.....	2
G2.301, 302		G2.611	
Heat Transfer.....	4	Air Conditioning.....	2
G2.311, 312		G15.101, 102	
Advanced Thermodynamics.....	4	Theoretical Physics.....	4

Electrical Engineering

Curriculum Requirements for the Degree of Master of Science in Electrical Engineering

Required Courses: (16 Semester Hours)

(1) ELECTRONICS-COMMUNICATION MAJOR		(2) ELECTRIC POWER MAJOR	
	Sem. Hrs.		Sem. Hrs.
G3.401, 402		G3.401, 402	
Transients in Linear Systems.....	4	Transients in Linear Systems.....	4
G3.701, 702		G3.611, 612	
Electronic Engineering.....	4	Advanced A-C Machinery.....	4
G14.101, 102		G3.911, 912	
Advanced Mathematics.....	4	Electric Power Circuits.....	4
G15.101, 102		G14.101, 102	
Theoretical Physics.....	4	Advanced Mathematics.....	4
	<u>16</u>		<u>16</u>

Elective Courses: (14 semester hours may be elected from among the following or other evening graduate courses)

(1) ELECTRONICS-COMMUNICATION MAJOR		(2) ELECTRIC POWER MAJOR	
	Sem. Hrs.		Sem. Hrs.
G3.101, 102		G3.111	
Servomechanisms.....	4	Metadyne Theory.....	2
G3.201, 202		G3.311	
Pulse Circuits.....	4	High-Voltage Engineering.....	2
G3.301, 302		G3.411	
Theory of Microwaves.....	4	Power System Stability.....	2
G3.501, 502		G3.412	
Communication Theory.....	4	Protective Relaying.....	2
G3.601, 602		G3.613	
Industrial Electronics.....	4	Electronic Control.....	2
G3.801, 802		G3.614	
Applications of Microwaves.....	4	Electrical Machinery Design.....	2
G3.901, 902			
Communication Networks.....	4		

Mathematics - Physics

Curriculum Requirements for the Degree of Master of Science in Mathematics - Physics

Required Courses: (16 Semester Hours)

	Sem. Hrs.
G14.101, 102 Advanced Mathematics.....	4
G14.320 Complex Variables.....	2
G15.101, 102 Theoretical Physics.....	4
G15.200 Modern Physics.....	2
Other Mathematics-Physics courses.....	4
	16

Elective Courses: (14 semester hours may be elected from among the Mathematics-Physics courses or other evening graduate courses)

Summary of Graduate Courses

Civil Engineering

Course Number	
G1.113, 114	Engineering Photogrammetry
G1.201, 202	Sanitary Engineering
G1.203	Sanitary Chemistry
G1.204	Sanitary Bacteriology
G1.205	Sanitary Analysis
G1.206	Sanitary Laboratory
G1.207	Microscopy of Water
G1.208	Industrial Waste
G1.209	Stream Sanitation
G1.210	Public Health Engineering
G1.211, 212	Advanced Hydraulics
G1.213, 214	Hydrology
G1.401, 402, 403	Indeterminate Structures
G1.501, 502	Cement and Concrete Technology
G1.503, 504, 505	Soil Mechanics and Foundation Engineering
G1.601, 602	Design of Structures
G1.701	Contracts, Specifications, Valuation

Mechanical Engineering

G2.200	Advanced Mechanics of Materials
G2.201, 202	Theory of Elasticity
G2.203, 204	Theory of Elastic Stability
G2.205	Experimental Stress Analysis
G2.207	Theory of Plasticity
G2.211, 212	Vibration Theory and Applications
G2.213, 214	Advanced Dynamics
G2.221, 222	Fluid Mechanics
G2.225	Dynamics of Viscous Flow
G2.241	Kinematics and Dynamics of Machines
G2.301, 302	Heat Transfer
G2.311, 312	Advanced Thermodynamics
G2.401	Pumps
G2.402	Fans
G2.405	Hydraulic Machinery
G2.411, 412	Gas Turbines
G2.501, 502	Power Plant Economics
G2.511, 512	Power Plant Design
G2.601	Refrigeration
G2.611	Air Conditioning
G2.701, 702	Metallography
G2.800	Automatic Control Engineering

Electrical Engineering

G3.101, 102	Servomechanisms
G3.111	Metadyne Theory
G3.201, 202	Pulse Circuits
G3.205	Computing Devices
G3.301, 302	Theory of Microwaves
G3.311	High-Voltage Engineering
G3.401, 402, 403	Transients in Linear Systems
G3.411	Power System Stability
G3.412	Protective Relaying, as applied to Power Systems
G3.501, 502	Communication Theory
G3.505	Engineering Acoustics
G3.520	Language and Communication
G3.601	Industrial Electronics
G3.602	Industrial Electronics (Semi-conductor Engineering)
G3.611, 612	Advanced Alternating-Current Machinery
G3.613	Electronic Control of Power Equipment
G3.614	Electrical Machinery Design
G3.701, 702	Electronic Engineering
G3.801, 802	Application of Microwaves
G3.901, 902	Communication Networks
G3.911, 912	Electric Power Circuits
G3.915	Electric Power Distribution

Chemical Engineering

G4.101	Distillation
G4.102	Gas Absorption
G4.201, 202	Process Heat Transfer
G4.501	Fundamentals of Instrumentation
G4.502	Industrial Process Control
G4.601, 602	Chemical Engineering Kinetics
G4.611, 612	Principles of High-Polymer Theory and Practice

Chemistry

G11.111, 112	Advanced Inorganic Chemistry
G11.235, 236	Advanced Organic Chemistry
G11.240	Mechanism of Organic Reactions
G11.331	Advanced Physical Chemistry
G11.332	Advanced Physical Chemistry
G11.340	Nuclear Chemistry

Mathematics

G14.50	Elementary Differential Equations
G14.101	Advanced Mathematics
G14.102	Advanced Mathematics
G14.200	Numerical and Graphical Methods for Engineers
G14.207	Modern Computational Methods
G14.210	Theory of Equations
G14.220	Statistics for Engineers
G14.221	Mathematical Statistics

G14.224	Experimental Statistics
G14.230	Probability
G14.240	Higher Algebra
G14.241	Modern Algebra
G14.245	Theory of Groups
G14.300	Fourier Series
G14.310	Vector Analysis
G14.320	Functions of a Complex Variable
G14.323	Theory of Functions of a Real Variable
G14.330	Modern Operational Methods
G14.340	Calculus of Variations
G14.510	Intermediate Differential Equations
G14.530	Partial Differential Equations
G14.540	Non-Linear Differential Equations
G14.600	Differential Geometry
G14.901, 902	Topics in Mathematics

Physics

G15.101, 102	Theoretical Physics
G15.111, 112	Mathematical Physics
G15.200	Modern Physics
G15.210	Introduction to Quantum Theory
G15.220	Introduction to Nuclear Physics
G15.225	Introduction to the Physics of Semi-conductors
G15.231, 232	Theory of Solids
G15.250	Theory of Spectra
G15.315, 316	Theoretical Mechanics
G15.400	Vibration and Sound
G15.500	Electromagnetic Theory (Short Course)
G15.503, 504	Electromagnetic Theory
G15.611	Physical Optics
G15.710	Thermodynamics
G15.720	Kinetic Theory and Statistical Mechanics
G15.741, 742	Chemical Physics
G15.901, 902	Topics in Physics

Description of Graduate Courses

The following synopses of courses of instruction offered by the several departments are given so that prospective students may obtain a comprehensive view of the scope of each course. Preparation courses are indicated in each instance. All courses are not offered every year, but the course offerings will be arranged in such a manner that students who desire to do so may make continuous progress toward the degree.

The number of students enrolled in each class will be limited to permit effective teaching at the graduate level and the University reserves the right to cancel any course for which an insufficient number of students apply. No student may enroll in more than two courses at one time without special permission of the Director of Engineering Graduate Study.

One semester hour credit is awarded for the work represented by a class meeting for one hour each week for one regular sixteen-week semester. Each of the following courses yields two semester hours credit.

Civil Engineering

The civil engineer who takes up graduate work in this field will find that the graduate treatment of the subject is in the direction of increased comprehensiveness. He will find that some of the topics to which he was introduced as an undergraduate are now taken up with an extended consideration of the variables and parameters involved. Particular features of problems which he encountered in his undergraduate curriculum are now discussed in some detail, and various problems which could not be adequately considered earlier are now investigated. The combination of a systematic study of the methods used in the analysis of problems with a discussion of their practical aspects results in a training which provides the graduate student with a sound and well-rounded background.

G1.113

G1.114 *Engineering Photogrammetry* (Offered in 1952-53)

Preparation: A two semester undergraduate course in Surveying

Course Content: A study of the basic principles of photogrammetry as applied to the general field of civil engineering. The following items are studied: geometry of perspective, iconometry, the camera, terrestrial and aerial photographs, horizontal and vertical control, tilt, radial triangulation, mosaics, stereo-comparator, and stereo-photogrammetry.

G1.201**G1.202 Sanitary Engineering** (Offered in 1952-53)

Preparation: A two semester undergraduate course in Sanitary Engineering

Course Content: The theory and design of water treatment works, including the following topics: aerators, reaction chambers, sedimentation tanks, water softening, iron removal, slow sand filters, rapid sand filters, and disinfection. The study of the theory and design of sewerage works, such as grit chambers, primary settling tanks, spiral flow tanks, trickling filters, dosing tanks, drying beds, Imhoff tanks, digesters, and gas storage tanks.

G1.203 Sanitary Chemistry (Offered in 1952-53)

Preparation: Two semesters of undergraduate general chemistry (with laboratory)

Course Content: An advance course of general chemistry stressing the basic chemical laws as they apply to the field of sanitary engineering. The course would encompass the following: fundamental laws, stoichiometry, gas laws, atomic structure, periodic system, hydrogen, alkali metals, halogens, oxygen group, aluminum group, carbon, nitrogen group, iron and manganese, acidimetric normality, oxidation and reduction, and oxidation potential.

G1.204 Sanitary Bacteriology (Offered in 1952-53)

Preparation: G1.203 — Sanitary Chemistry

Course Content: A course of study in the field of bacteriology with emphasis on those phases of bacteriology employed by the sanitary engineer, namely, growth, form, environment, enzymes, disinfection, carbon cycle, nitrogen cycle, molds, yeasts, iron bacteria, sulphur bacteria, bacteriology of water and sewage, bacteriology of milk, swimming pools, and quantitative bacteriology.

G1.205 Sanitary Analysis

Preparation: G1.203 — Sanitary Chemistry and G1.204 — Sanitary Bacteriology

Course Content: This is a laboratory course employing standard methods of analysis for water and sewage, both chemically and bacteriologically. Instruction is given in the proper methods of sampling, making standard solutions and reagents, preparation of media, methods of staining and their significance to the art of sanitary interpretation. The writing and interpretation of sanitary reports are stressed. (Laboratory 6 hours per week, 4 sem. hrs. credit.)

G1.206 *Sanitary Laboratory*

Preparation: G1.205 — Sanitary Analysis

Course Content: Laboratory studies and reports are submitted on the following topics: sludge digestion, activated sludge, sludge filtration, filtration studies, coagulation, aeration, water softening, disinfection, chlorination, and B.O.D. studies. (Laboratory 6 hours per week, 4 sem. hrs. credit.)

G1.207 *Microscopy of Water*

Preparation: G1.203 — Sanitary Chemistry and G1.204 — Sanitary Bacteriology

Course Content: An applied course in microscopy covering the following items: microscopic organisms, collection and examination of samples, odors and tastes, limnology both physical and chemical, rheology, purification of streams, algae control, and determinative microscopy.

G1.208 *Industrial Waste*

Preparation: G1.203 — Sanitary Chemistry and G1.204 — Sanitary Bacteriology

Course Content: A study of various manufacturing processes and their waste problems, together with methods of utilization, treatment, and disposal of their waste products. Specific processes that can be adapted to specific wastes and their necessary concomitant structures are studied with the viewpoint of designing suitable treatment plants.

G1.209 *Stream Sanitation*

Preparation: G1.203 — Sanitary Chemistry and G1.204 — Sanitary Bacteriology

Course Content: This course deals with the basic principles of stream sanitation and corrective control methods. The topics taken up in this course include the following: aerobic and anaerobic decomposition, oxygen balance, carbon dioxide, oxidation, reduction, bacterial pollution, industrial pollution, sewage pollution, water supply, shellfish, fish life, riparian rights, recreation, and general stream sanitation.

G1.210 *Public Health Engineering*

Preparation: G1.203 — Sanitary Chemistry and G1.204 — Sanitary Bacteriology

Course Content: This course is designed for those men who are interested in the art of administering sanitary engineering for public health. It stresses public health through sound engineering practice.

G1.211

G1.212 *Advanced Hydraulics*

Preparation: A two semester undergraduate course in Hydraulics

Course Content: An advanced course in Hydraulics, presenting the following concepts: energy, continuity, momentum, flow nets, significance of the Froude and Reynolds numbers, fluid motion in a closed conduit, open channels, surface resistance, dimensional analysis, dynamic similarity, theory of models and pipe networks. The course continues with further study of open channel flow, backwater curve, drawdown curve, hydraulic jump, location of hydraulic jump, transitions in channels, theory of waves, cavitation and water hammer.

G1.213

G1.214 *Hydrology* (Offered in 1952-53)

Preparation: Differential and Integral Calculus

Course Content: A study of the principles of statistical methods as applied to Hydraulics and Sanitary Engineering. The collection and sampling of raw data with an aim to predicting such phenomena as precipitation, run-off, floods and stream flow. Analysis, correlation, and accuracy of these predictions are studied and compared by arithmetic and graphical methods.

G1.401

G1.402 *Indeterminate Structures* (Offered in 1952-53)

Preparation: Differential and Integral Calculus, Theory of Structures

Course Content: Reconsideration of basic methods of analysis to be employed, indeterminateness, stability, virtual work, Castigliano's Theorem, moment-area, elastic weights, Williot-Mohr, and conjugate beam. Analysis and determination of deformation of continuous structures and trusses with redundant members. Applications of virtual work, Castigliano's Theorem of least work and slope-deflection methods.

G1.403 *Indeterminate Structures* (Offered in 1952-53)

Preparation: G1.402 — Indeterminate Structures

Course Content: A continuation of G1.401 and 402. Analysis and deformation of frames by the moment and shear distribution process. The theorem of three moments and the fixed point method. Influence lines for continuous beams and trusses and domes, framed space structures, curved beams loaded normal to the plane of curvature. Analysis and deformation of arches and cables.

G1.501

G1.502 *Cement and Concrete Technology*

Preparation: Materials of Engineering

Course Content: Manufacture and properties of Portland cement, specific surface, technical tools of modern engineering, control of concrete materials, history and properties of aggregates, concrete mix design, mix design standards, factors affecting the properties of concrete, control of concrete. Three laboratory periods will be held during the first semester.

Properties of hardened concrete, cement dispersion and wetting, effect of aggregate characteristics on properties of concrete, function and mechanism of air entrainment, practical applications, dynamic modulus of concrete, effect of alkalies on aggregates having active hydro-siliceous materials, new developments in concrete materials, pump-concrete methods, pozzolanic materials, deterioration of concrete due to natural waters, intrusion Prepack concrete, soil cement. Two laboratory periods will be held during the second semester.

G1.503

G1.504 *Soil Mechanics and Foundation Engineering* (Offered in 1952-53)

Preparation: Differential and Integral Calculus

Course Content: Soil properties, soil exploration and sampling, soil classification, permeability, seepage, compressibility, consolidation, plastic equilibrium. Stresses and strains. Practical treatments and applications.

G1.505 *Soil Mechanics and Foundation Engineering* (Offered in 1952-53)

Preparation: G1.504 — Soil Mechanics and Foundation Engineering

Course Content: A continuation of G1.503 and 504. Practical applications such as earth pressures, retaining walls, tunnels, settlement and stability problems.

G1.601

G1.602 *Design of Structures* (Offered in 1952-53)

Preparation: G1.403 — Indeterminate Structures

Course Content: Advanced structural design in steel, concrete and timber with emphasis on the economics of design and on those aspects of design least readily obtained through self-study. Riveting and welding. Riveted and welded connections. Wind bracing connections in tall building frames. Design of the rigid frame bridge. Design of simple structures for dynamic loads. Material may be adapted to the particular needs or interests of the class.

G1.701 *Contracts, Specifications, Valuation* (Offered in 1952-53)

Preparation: Undergraduate Economics

Course Content: Law of contracts, estimates, specifications and tolerances for materials; quality of workmanship; equipment; financing; evaluation, etc.

Mechanical Engineering

The rapid strides that are now taking place in the direct application of scientific techniques to the solution of many modern engineering problems make it imperative that the present-day engineer be competently trained in the fundamentals that are basic to all branches of engineering. For the mechanical engineer, in particular, the task of preparation is, in many respects, unusually severe, for the ramifications of his problems often lead into all branches of engineering and science. Furthermore, a solution which is sufficient today may prove to be inadequate tomorrow. The curricula which have been set up in mechanical engineering, both in heat-power and in mechanics, have been designed with the view in mind of providing the mechanical engineering student with a background which will enable him to meet the challenge of his profession.

G2.200 Advanced Mechanics of Materials (Offered in 1952-53)

Preparation: Strength of Materials

Course Content: Bending stresses in and deflection of beams due to non-symmetrical loading, shear stress distribution in these beams, shear center location, beams on elastic foundations, stresses in and deflection of curved beams, chain links and hooks, stresses and strains in thick cylinders, non-circular torsion, bending of thin flat plates under varied loadings and methods of support.

G2.201

G2.202 Theory of Elasticity (Offered in 1952-53)

Preparation: G14.102 — Advanced Mathematics, Strength of Materials

Course Content: Analysis of stress and strain in two and three dimensions, principal stresses and strains, differential equations of equilibrium, boundary conditions, compatibility equations, stress function, determination of displacements, equilibrium equations in terms of displacements. Stress concentration near a load and stresses set up by unequal temperature distribution. Strain energy methods. Solution of problems in two and three dimensions.

G2.203

G2.204 Theory of Elastic Stability

Preparation: G2.202 — Theory of Elasticity, G14.102 — Advanced Mathematics

Course Content: Bending of prismatic bars, stresses beyond proportional limit, buckling of centrally compressed bars, Euler's formula, energy methods, method of successive approximations. Stability of a system of elastic bars; experiments and design formulas, buckling of compressed rings and curved bars, bending and buckling of thin plates and shells, critical loads, buckling due to shear action; experimental results on cylindrical shells, curved sheet panels, stiffened cylindrical shells, shells under torsion, spherical shells.

G2.205 *Experimental Stress Analysis*

Preparation: G2.202 — Theory of Elasticity

Course Content: Theoretical and practical consideration of methods of determining stress distributions. The fundamental theory basic to the various methods will be emphasized and a comparison of the results obtainable by these methods will be made. Photoelasticity, brittle lacquers, strain gauge techniques and instrumentation are a few of the methods given consideration.

G2.207 *Theory of Plasticity*

Preparation: G2.202 — Theory of Elasticity

Course Content: The mathematical theory of plasticity and its engineering applications; the laws of plastic flow; general stress-strain relations, plastic flow in thick-walled bodies, plastic torsion.

G2.211

G2.212 *Vibration Theory and Applications*

Preparation: Differential Equations, Dynamics

Course Content: One degree systems, natural frequencies, forced vibrations; dry and viscous friction; many degrees of freedom; non-linear and self-induced vibrations, torsional vibrations; balancing; mechanical, electrical, and acoustical analogies; distributed masses, beams, methods of Rayleigh and Ritz, vibration isolation and prevention, vibration measuring instruments.

G2.213

G2.214 *Advanced Dynamics* (Offered in 1952-53)

Preparation: G14.102 — Advanced Mathematics, Dynamics

Course Content: A presentation of the general principles of dynamics together with their application to various engineering problems. Dynamics of a particle, dynamics of a system of particles, dynamics of a system of particles with constraints, generalized coordinates, virtual work. Lagrange's equations, Hamilton's principle, small oscillations of conservative systems, rotation of a rigid body, Eulerian equations of motion.

G2.221

G2.222 *Fluid Mechanics* (Offered in 1952-53)

Preparation: G14.102 — Advanced Mathematics, Hydraulics, Dynamics

Course Content: Principles of ideal flow, generalized equations, vortex motion, potential flow, combination of flows, application of functions of a complex variable, conformal mapping, viscous flow, laminar flow, flow around immersed bodies, boundary layer, dynamic similarity.

G2.225 *Dynamics of Viscous Flow*

Preparation: G14.102 — Advanced Mathematics, Dynamics

Course Content: The general Navier-Stokes equations for viscous flow, boundary layer theory, study of the work of von Karman and Blasius, study of flow stability, criteria, laminar flow, turbulence, and viscous flow around various bodies.

G2.241 Kinematics and Dynamics of Machines

Preparation: G14.102 — Advanced Mathematics, Dynamics

Course Content: A critical examination of the fundamentals of kinematics and dynamics in two and three dimensions as applied to machines.

*G2.301**G2.302 Heat Transfer (Offered in 1952-53)*

Preparation: G14.102 — Advanced Mathematics, Dynamics, Elements of Heat Transfer

Course Content: Review of thermal conductivity, thermal resistance, film coefficients, composite walls, critical radius of insulation, logarithmic mean temperature difference and overall coefficient of heat transfer. Reynolds analogy, dimensional analysis, Reynolds, Prandtl and Nusselt numbers, experimental correlation and equivalent diameters.

Fluid friction, pressure drops, Wilson plot for condensers, condensation, Nusselt's derivation, radiation, basic definition, Lambert's law, theoretical aspects of radiation processes, heat transfer to boiling liquids. Heat transfer by conduction, steady state, two dimensional applications and cylindrical coordinates, internal sources, finite difference and relaxation type solutions, field mapping solutions, electrical analogy solutions.

*G2.311**G2.312 Advanced Thermodynamics (Offered in 1952-53)*

Preparation: Differential Equations, Thermodynamics

Course Content: Review of first and second laws of thermodynamics, general thermodynamic relations, steady flow, thermodynamic potentials — equations of state, determination of properties of fluids — thermodynamics of change of state, Clapeyron's equation, Clausius equation, specific heats of saturated vapors, triple point, latent heat equation, equilibrium of systems, equilibrium between three states of same substance, phase rule, thermodynamic surfaces, conditions of stability, gaseous systems, gas laws, mixtures of gases, equilibrium of gaseous systems at constant temperature and pressure, heat of reaction, LeChatelier's principle, Nernst heat theorem, absolute value of gas entropy — thermodynamics of liquids and dilute solutions, osmosis, vapor pressure of solutions, thermodynamic potential of a solution, ebullition of liquids, surface tension — thermodynamics of electrical phenomena, thermoelectricity, paramagnetism, thermodynamics of radiation, Stefan-Boltzmann law, Wien's law, Planck's equation.

G2.401 Pumps (Offered in 1952-53)

Preparation: Hydraulics

Course Content: Flow of fluids in pipes and ducts, head on pumps, fans and blowers; development of head, net positive suction head, cavitation and specific speed of pumps; affinity laws, selection of pumps to suit various operating conditions and methods of driving; automatic operation, types of construction and materials used, methods of priming centrifugal pumps, pumping of chemicals, oils and sludges, special problems of pump installation and operation, water hammer in pump discharge lines.

G2.402 Fans (Offered in 1952-53)

Preparation: Thermodynamics, Hydraulics

Course Content: Fan characteristics, design, size, characteristics of fan inlet, inlet ducts and outlet connections, diffuser casing. Various types of fan wheels. Velocity diagrams. Propeller fans. Casing and impeller design.

G2.405 Hydraulic Machinery

Preparation: G2.401 — Pumps, G2.402 — Fans

Course Content: Principles of operation of fluid dynamical machines; impulse, reaction, and propeller turbines. Basic theory of turbomachinery and its application.

G2.411**G2.412 Gas Turbines**

Preparation: G14.102 — Advanced Mathematics, Thermodynamics

Course Content: General thermodynamic, aerodynamic theory of axial flow turbines and compressors, blade and flow path design, leakage seals, radial flow machines. Mechanical design problems of high-speed turbomachinery, theory and design of heat exchangers, combustors, performance of gas turbine plant under varying operation conditions.

G2.501**G2.502 Power Plant Economics** (Offered in 1952-53)

Preparation: Thermodynamics

Course Content: Cost of power and heat as required by various types of factories, hospitals and other large buildings. Distribution of steam to groups of buildings for the most economical use of steam. Effective use of exhaust and bled steam for process, heat and air conditioning. Costs of power and heat by an isolated plant compared to that of purchased power. Computations covering an isolated steam plant with supplementary Diesel equipment and public utilities breakdown connections.

G2.511**G2.512 Power Plant Design**

Preparation: G2.502 — Power Plant Economics

Course Content: Latest development in the theory and design of modern power generation for isolated and central stations. Computations for a small central station involving the size and type of boiler, prime movers, feed water heaters, pumps, coal handling equipment. Analysis and computations covering equipment for an isolated plant including steam generating units, engines or turbines, condensing equipment, piping and general auxiliaries.

G2.601 Refrigeration

Preparation: Thermodynamics

Course Content: A study of thermodynamic theory and heat transfer as related to refrigeration, refrigerants and their properties, and problems connected with recent advances in refrigeration and design.

G2.611 Air Conditioning

Preparation: Thermodynamics, Elements of Heating and Air Conditioning

Course Content: Selected advanced topics in the field of air conditioning

G2.701**G2.702 Metallography (Offered in 1952-53)**

Preparation: An undergraduate course in metallurgy

Course Content: A brief review of the electron theory and crystallography as applied to metals. Explanation of the binary thermal equilibrium diagrams. Discussion of plastic deformation (creep, slip, twinning, fatigue, recrystallization and grain growth). Microstructures and theory of heat treatment, hardenability and precipitation hardening as applied to cast and wrought plain carbon steels, the common alloyed steels, such as nickel, chromium, manganese, stainless, high speed steels, cemented carbides, wrought iron, malleable, ductile and gray cast irons, the more important commercial non-ferrous metals and alloys of aluminum, copper, lead, etc.

G2.800 Automatic Control Engineering

Preparation: Differential Equations

Course Content: Fundamental principles of feed-back systems, stability criteria, derivative and integral control, physical components of feed-back systems. This course is intended to give the non-electrical engineer an introduction to automatic control engineering by stressing the fundamental physical principles rather than the electro-mathematical aspects.

Electrical Engineering

The present trend in the field of electrical engineering is toward a greater emphasis on physico-mathematical techniques. Hence, the electrical curricula of the contemporary graduate schools are emphasizing the analytical approach to electrical engineering problems rather than the purely empirical. Accordingly, the courses outlined below have been designed to present particularly the analytical methods used in solving various types of modern electrical engineering problems, without, however, neglecting altogether those practical considerations necessary for engineering application. Where appropriate, laboratory demonstrations and exercises have been included.

G3.101**G3.102 Servomechanisms (Offered in 1952-53)**

Preparation: A-C Theory, Dynamics, Transients in Linear Systems

Course Content: Analysis and synthesis of linear servomechanisms by both transient and steady-state methods. Adjustments and optimum design considerations. Consideration of the various electrical, mechanical, and hydraulic components used in typical servomechanisms. Methods of testing and the formulation of specifications of systems for specific usages.

G3.111 *Metadyne Theory*

Preparation: G3.402 — Transients in Linear Systems, A-C Machinery

Course Content: A general study of the amplidyne and related devices, and their application to control problems.

G3.201

G3.202 *Pulse Circuits* (Offered in 1952-53)

Preparation: Differential Equations, Transients in Linear Systems, Electronics, A-C Theory

Course Content: The principles and techniques of pulse-forming circuits as applied to radar, television and pulse-modulation communication systems. Brief descriptions of these three types of communication systems are given and the basic circuits involved are considered, such as multivibrators, modulators, sweep-generating circuits, blocking oscillators, and delay lines. Emphasis is placed on graphical methods for the analysis and design of such circuits. R-f sources and methods of pulse modulation. Receivers for pulsed signals with emphasis on the analysis and synthesis of the component i-f and video amplifiers. Counting circuits.

G3.205 *Computing Devices*

Preparation: G3.202 — Pulse Circuits

Course Content: A study of the construction and functioning of various computer components. Bi-stable circuits, switches and gates, storage and delay mechanisms; electrical and mechanical devices for adding, multiplying, integrating, and differentiating. This course stresses the theory and means for performing various mathematical operations.

G3.301

G3.302 *Theory of Microwaves* (Offered in 1952-53)

Preparation: Basic Field Theory, G15.102—Theoretical Physics, G14.102 — Advanced Mathematics

Course Content: Fundamentals of electromagnetic theory. Field problems involving various coordinate systems. Quasi-stationary phenomena. Maxwell's equations as applied at low and high frequencies. Circuit concepts at high frequencies. Propagation in unbounded and bounded regions.

G3.311 *High-Voltage Engineering* (Offered in 1952-53)

Preparation: A-C Theory

Course Content: Insulation of the solid and liquid types. Lightning, surge protection in general, and insulation coordination. Corona. Destructive and non-destructive testing methods.

G3.401 Transients in Linear Systems (Offered in 1952-53)

Preparation: Differential Equations, A-C Theory, Dynamics

Course Content: Review of the methods employed in writing the integro-differential equations for electric circuits. Network topology and duality. Selected methods for solving algebraic equations of higher degree. Introduction to the methods of transformation calculus and complex-frequency concepts. Application of Laplace transforms to the solution of selected linear lumped-parameter electric circuits.

G3.402 Transients in Linear Systems (Offered in 1952-53)

Preparation: G3.401 — Transients in Linear Systems

Course Content: Extension of the methods of G3.401 to cover mechanical and electromechanical systems. Feedback principles, servomechanisms, and stability criteria. Response of systems to impulses and repeated functions. Convolution theory. Complex-variable theory, integration in the complex plane, and the solution of the inversion integral.

G3.403 Transients in Linear Systems (Offered in 1952-53)

Preparation: G3.402 — Transients in Linear Systems

Course Content: Additional applications of the methods of transformation calculus to linear lumped-parameter and distributed-parameter systems. Linear difference equations and their application. Advanced circuit techniques and oscillation criteria. Methods of analysis applicable to non-linear systems.

G3.411 Power System Stability

Preparation: Polyphase A-C Circuits, A-C Machinery

Course Content: Includes a study of steady-state power limits and transient stability of electric power systems.

G3.412 Protective Relaying, as Applied to Power Systems

Preparation: Polyphase A-C Circuits, A-C Machinery

Course Content: Types of relays, calculation of short-circuit currents, the selection of the proper relay, and the solution of practical relaying problems.

G3.501**G3.502 Communication Theory** (Offered in 1952-53)

Preparation: G14.102 — Advanced Mathematics

Course Contents: Signal analysis on time and frequency bases. Theory of amplitude, angular and pulse modulation. Probability theory applied to noise analysis. Introduction to information theory for discrete and continuous channels with applications.

G3.505 Engineering Acoustics

Preparation: A-C Theory, Differential Equations

Course Content: The psycho-acoustic aspects of sound, characteristics of sound waves and sound transmission systems. Acoustic transducers, measuring equipment and techniques. Engineering applications.

G3.520 *Language and Communication*

Preparation: Consent of instructor

Course Content: Language will be described and analyzed as a unique type of communication system, consisting of several levels of quantified symbols. The component parts of the speech event will be described, and speech data analyzed in terms of acoustic, articulatory and perceptual phenomena.

G3.601 *Industrial Electronics* (Offered in 1952-53)

Preparation: Basic Electronics and Circuits, A-C Theory, Differential Equations

Course Content: The design and analysis of electronic circuits employing phototubes, pulsed-light sources, cathode-ray tubes, etc. Consideration of recent developments. Electronic instrumentation. Magnetic control devices.

G3.602 *Industrial Electronics* (Semi-Conductor Engineering) (Offered in 1952-53)

Preparation: Basic Electronics and Circuits, A-C Theory, Differential Equations

Course Content: Pictorial and phenomenological introduction to semi-conductor mechanism. Carrier emission, rectification and amplification; equivalent circuit representation; duality and the use of duality in specific circuits; c-w applications; functional comparison between vacuum tubes and germanium triodes.

G3.611

G3.612 *Advanced Alternating-Current Machinery* (Offered in 1952-53)

Preparation: Polyphase A-C Circuits, A-C Machinery

Course Content: Special topics concerning transformers, synchronous and asynchronous machine operation. Includes a study of machine reactances, the two-reaction theory, and transient operation.

G3.613 *Electronic Control of Power Equipment*

Preparation: Basic Course in Electronic Circuits, D-C Machinery

Course Content: Fundamentals of application of industrial control equipment; induction and dielectric heating; regulation and control devices, industrial rectifiers and inverters.

G3.614 *Electrical Machinery Design*

Preparation: A-C Machinery

Course Content: A study of the methods used in the practical design of transformers, synchronous machines, and induction motors.

G3.701

G3.702 *Electronic Engineering* (Offered in 1952-53)

Preparation: Basic Electronics and Electronic Circuits, A-C Theory, G3.402—Transients in Linear Systems, G14.102 — Advanced Mathematics

Course Content: Review of basic electronic theory and vacuum-tube circuits. Graphical and equivalent-circuit methods of analysis as applied to Class-A audio and direct-coupled amplifiers. Push-pull vacuum-tube circuits. Class B and C operation. Feed-back amplifiers and regulator circuits. Modulation and demodulation methods. Pulsed and c-w microwave and r-f sources.

G3.801

G3.802 *Application of Microwaves*

Preparation: G3.301 — Theory of Microwaves

Course Content: Applications of the principles covered in Theory of Microwaves (G3.301, 302) to the analysis of wave guides, cavity resonators, radiators, junctions, and irises. Consideration is given to the practical aspects of microwave circuitry.

G3.901

G3.902 *Communication Networks* (Offered in 1952-53)

Preparation: A-C Theory, Differential Equations

Course Content: Network theorems. Steady state and transient methods. General network analysis by loop and node equations. Reflection loss and impedance matching. Iterative and image parameters, insertion-loss formula. Constant-k, m-derived and composite filters, fractional terminations, lattice structures. Mathematics of circuit analysis, including determinants, matrices, complex-frequency concept, and Fourier integral. Energy functions, criteria for physical realizability and stability. Synthesis of networks for prescribed driving-point or transfer characteristics.

G3.911

G3.912 *Electric Power Circuits* (Offered in 1952-53)

Preparation: Polyphase A-C Circuits, A-C Machinery

Course Content: Steady state analysis of balanced and unbalanced power circuits by means of symmetrical and related components. Long and short transmission line theory. Study of skin and proximity effects. Electrical characteristics of synchronous and induction machines under abnormal operating conditions.

G3.915 *Electric Power Distribution* (Offered in 1952-53)

Preparation: G3.912 — Electric Power Circuits or consent of instructor

Course Content: Primary and secondary distribution systems.

Chemical Engineering

In order to be of service to engineers who are employed in the field of chemical engineering and other allied fields — to assist them in their professional development — the following courses are offered. The offering of these courses does not imply that a master's degree program in chemical engineering will be established. However, the credit for these courses can be submitted under the optional electives in fulfilling the requirements for the Master of Science degree in the other branches of engineering provided that the department sponsoring the degree approves.

G4.101 Distillation (Offered in 1952-53)

Preparation: Bachelor of Science in Chemical Engineering or its equivalent

Course Content: Review of the physical chemistry background of distillation and rectification covering development of phase equilibria relationships and thermodynamic evaluation of experimental data. Thorough investigation of distillation including batch, steam and flash and of the analytical and graphical methods of designing rectifying columns for binary and multicomponent mixtures with and without side streams. Discussions of various efficiencies and design of commercial towers.

G4.102 Gas Absorption (Offered in 1952-53)

Preparation: Bachelor of Science in Chemical Engineering or its equivalent

Course Content: Brief review of equilibrium considerations. Development of basic rate equations for mass transfer. Study of theoretical relationships (analogies) expressing mass transfer in terms of heat and/or momentum transfer. Review of available mass transfer data — wetted wall, packed, slat, etc., towers and wet bulb psychrometers—considering individual and over-all coefficients. Data are used to test theoretical relationships. Development of methods of extending observed data to other systems and operating conditions. Study of the design methods employed, including multicomponent absorption systems.

G4.201

G4.202 Process Heat Transfer

Preparation: Bachelor of Science in Chemical Engineering or Chemistry or its equivalent

Course Content: A more extensive treatment of those processes of heat transfer than is usually covered in an undergraduate course. Flow of heat, conduction, convection, radiation; consideration of process heat transfer as applied to the design and performance of heat exchangers and evaporators.

G4.501 *Fundamentals of Instrumentation* (Offered in 1952-53)

Preparation: Bachelor of Science degree or equivalent

Course Content: Theoretical principles underlying the design and operation of control instruments. Analysis of stimulus-response relations. Industrial instruments for measurement and control, including those based on pneumatic, hydraulic, and electrical mechanisms.

G4.502 *Industrial Process Control* (Offered in 1952-53)

Preparation: Bachelor of Science degree or equivalent

Course Content: Fundamental principles involved in instrument control of industrial processes. Economic considerations. Application of control instruments to obtain automatic control of temperature, pressure, fluid flow, liquid level, humidity and pH.

G4.601

G4.602 *Chemical Engineering Kinetics* (Offered in 1952-53)

Preparation: Undergraduate work in Physical Chemistry and Thermodynamics

Course Content: Principles of chemical kinetics including the fundamentals of the Arrhenius Theory of molecular collisions and energy distribution as well as the theory of absolute reaction rates. Homogeneous and heterogeneous reactions of industrial importance will be analyzed from laboratory data to design commercial reactors. Related topics of heat and mass transfer will be included in the reactor design problems.

G4.611

G4.612 *Principles of High-Polymer Theory and Practice*

Preparation: Bachelor of Science in Chemical Engineering or Chemistry or its equivalent

Course Content: The principles of high-polymer theory and practice, covering molecules of high molecular weight, whether they be fibers, plastics, rubber surface coatings, or adhesives. Emphasis will be placed on demonstrating how fundamentals of physics, chemistry, and engineering are applied.

Chemistry

In order to be of service to chemists and chemical engineers employed in industry, the following evening graduate courses in Chemistry are offered.

At the present time the University does not offer an evening graduate program of study leading to the degree of Master of Science in Chemistry. However, if there is sufficient demand, further graduate courses in Chemistry will be offered and it is planned to establish a curriculum leading to the degree of Master of Science in Chemistry.

G11.111**G11.112** *Advanced Inorganic Chemistry* (Offered in 1952-53)

Preparation: A Bachelor of Science degree in Chemistry or Chemical Engineering or its equivalent

Course Content: A study of the elements and the more important classes of compounds from the standpoint of the periodic table. Typical properties and reactions are examined in terms of electronic structures. Consideration is given to theories of valence as applied to inorganic compounds.

G11.235**G11.236** *Advanced Organic Chemistry* (Offered in 1952-53)

Preparation: Bachelor of Science in Chemistry or Chemical Engineering or its equivalent

Course Content: Lectures on selected topics in organic chemistry. Mechanisms of organic reactions, bond types, resonance, displacement reactions, coordination compounds, molecular rearrangements. Mechanisms of organic reactions continued. Carbonyl compounds, alicyclic compounds and strain theory, polymerization, reactions of olefinic compounds, catalytic cracking.

G11.240 *Mechanism of Organic Reactions* (Offered in 1952-53)

Preparation: G11.236 — Advanced Organic Chemistry

Course Content: Study of various organic reactions from the standpoint of molecular structure and electronic configuration.

G11.331 *Advanced Physical Chemistry* (Offered in 1952-53)

Preparation: Bachelor of Science in Chemistry or Chemical Engineering or its equivalent

Course Content: Lectures on selected topics in physical chemistry. Atomic structure and atomic spectra. Radioactivity, isotopes, and elements of nuclear reactions.

G11.332 *Advanced Physical Chemistry* (Offered in 1952-53)

Preparation: Bachelor of Science in Chemistry or Chemical Engineering or its equivalent

Course Content: Lectures on selected topics in physical chemistry. First and second laws of thermodynamics, gaseous state, solid state.

G11.340 *Nuclear Chemistry* (Offered in 1952-53)

Preparation: Bachelor of Science in Chemistry or Chemical Engineering or its equivalent

Course Content: Nuclear composition, study of isotopes and their separations, natural and artificial radioactivity, nuclear reactions and decay.

Mathematics

The study of advanced engineering mathematics presupposes a background in mathematics through the elementary theory of ordinary differential equations, devoted to the study of the standard methods of manipulating the common types of ordinary differential equations. The treatment of advanced mathematics for engineering students should be in accord with the fundamental fact that it is to be useful to the engineer, either in direct application or as training in analytical thinking. However, in view of the recent great impetus given to the application of abstract mathematical techniques to the solution of technical problems, it is difficult to establish the criteria and bounds of usefulness. It might even be stated that there is no branch of mathematics so abstruse that it cannot be put to some use in solving some particular engineering problem.

G14.50 Elementary Differential Equations (Offered in 1952-53)

Preparation: Differential and Integral Calculus

Course Content: This course is designed especially to fit the needs of those students who intend to pursue graduate work in the Graduate Division but whose undergraduate mathematical background is weak either because they did not have differential equations as undergraduates or because they have been away from formal mathematical work for some time. (This two (2) semester hour course may be required of certain graduate students; however, it cannot be used in fulfilling the credit requirements for the master's degree.)

G14.101 Advanced Mathematics (Offered in 1952-53)

Preparation: Differential Equations

Course Content: Linear ordinary differential equations: linear operators, simultaneous equations, variation of parameters, hyperbolic functions. The Laplace transformation: the inverse transform, convolution, applications, gamma functions. Series solutions of differential equations: power series, method of Frobenius, Bessel functions, Legendre functions.

G14.102 Advanced Mathematics (Offered in 1952-53)

Preparation: G14.101 — Advanced Mathematics

Course Content: Boundary value problems and orthogonal functions: orthogonality, characteristic functions, expansion theorem, Fourier series, Fourier-Bessel series, Legendre series. Vector analysis: algebra of vectors, calculus of vectors, line and surface integrals. Partial differential equations: partial differentiation, linear equations of second order. Solution of partial differential equations of mathematical physics: heat flow, temperature distribution, fluid flow, vibration.

G14.200 Numerical and Graphical Methods for Engineers

Preparation: Differential and Integral Calculus

Course Content: Numerical solution of equations, empirical formulas and curve fitting, least squares, nomographs, graphical methods, interpolation.

G14.207 Modern Computational Methods (Offered in 1952-53)

Preparation: G14.102 — Advanced Mathematics

Course Content: A study of various basic mathematical techniques for the numerical analysis of problems in engineering and physics by means of high-speed computing machines. Approximations, interpolation, finite differences, difference equations; relaxation methods.

G14.210 Theory of Equations

Preparation: Differential and Integral Calculus

Course Content: Solutions of the cubic and quartic equations, general theorems on the roots of equations, symmetric functions, isolation of the real roots of equations, various approximate solutions of numerical equations, application of determinants to systems of equations.

G14.220 Statistics for Engineers (Offered in 1952-53)

Preparation: Differential and Integral Calculus

Course Content: Fundamental statistical methods, large-sample theory, tests of significance. Simple correlation and linear regression, introduction to analysis of variance and small-sample methods. Application to quality control and other engineering problems.

G14.221 Mathematical Statistics

Preparation: G14.102 — Advanced Mathematics or equivalent

Course Content: The fundamental principles of statistics from the point of view of random variables and probability laws. This course covers many of the same topics as G14.220, but with more emphasis on mathematical derivations. Moment-generating and characteristic functions, multivariate distributions, derivation of certain sampling distributions.

G14.224 Experimental Statistics

Preparation: G14.221 — Mathematical Statistics or G14.220 — Statistics for Engineers

Course Content: Randomized blocks, factorial designs, Latin squares, and other topics in Design of Experiments. Goodness of fit tests, 2×2 tables, correlation methods, applications to engineering problems.

G14.230 Probability (Offered in 1952-53)

Preparation: G14.102 — Advanced Mathematics or equivalent.

Course Content: Permutations and combinations; addition and multiplication theorems; discrete and continuous probability distributions, including binomial, Poisson and Normal; Bernoulli's theorem; Bayes' theorem; engineering applications.

G14.240 Higher Algebra (Offered in 1952-53)

Preparation: G14.102 — Advanced Mathematics or equivalent.

Course Content: Linear transformations, linear equations, matrices and bilinear forms, quadratic and Hermitian forms.

G14.241 Modern Algebra

Preparation: G14.102 — Advanced Mathematics

Course Content: Introduction to the general algebraic properties of groups, rings, ideals, fields, and algebras.

G14.245 *Theory of Groups*

Preparation: G14.102 — Advanced Mathematics

Course Content: Topics selected from the theories of finite groups, topological groups, group representations.

G14.300 *Fourier Series* (Offered in 1952-53)

Preparation: G14.102 — Advanced Mathematics or equivalent

Course Content: A problem course dealing with the application of trigonometric series and integrals and related forms to differential equations and boundary value problems.

G14.310 *Vector Analysis* (Offered in 1952-53)

Preparation: G14.102 — Advanced Mathematics or equivalent

Course Content: The theory and method of vector analysis as applied in physics and applied mathematics.

G14.320 *Functions of a Complex Variable* (Offered in 1952-53)

Preparation: G14.102 — Advanced Mathematics or equivalent

Course Content: The general theory of functions of a complex variable, Cauchy's theorem, Taylor's and Laurent's series, the theory of residues, conformal mapping, the Schwartz-Christoffel transformation.

G14.323 *Theory of Functions of a Real Variable*

Preparation: G14.102 — Advanced Mathematics

Course Content: The real number system, bounds and limits of sequences, continuous functions, a critical study of differentiation and integration, existence theorems.

G14.330 *Modern Operational Methods*

Preparation: G14.102 — Advanced Mathematics or equivalent

Course Content: The solution of ordinary and partial differential equations of engineering by operational methods.

G14.340 *Calculus of Variations*

Preparation: Theory of Functions or consent of the instructor

Course Content: The minima of simple integrals in non-parametric form in three-space. Necessary and sufficient conditions for a minimum, fields, and the Hamilton-Jacobi theory.

G14.510 *Intermediate Differential Equations*

Preparation: G14.102 — Advanced Mathematics or equivalent

Course Content: Special solvable non-linear equations, linear equations, transformations, and symbolic methods; solutions in series. Riccati's, Bessel's, and Legendre's equations.

G14.530 *Partial Differential Equations*

Preparation: G14.102 — Advanced Mathematics

Course Content: Types of equations which are widely used in engineering. The vibrating string, Laplace's equation, the flow of heat. Fourier series and integrals, Bessel and Legendre functions, orthogonal functions.

G14.540 Non-Linear Differential Equations

Preparation: Consent of the instructor

Course Content: The topological methods of Poincare, the work of van der Pol. Oscillations, non-linear resonance, and other applications.

G14.600 Differential Geometry

Preparation: G14.102 — Advanced Mathematics or equivalent

Course Content: Differential properties of space curves, developable surfaces, curved surfaces, and systems of curves on surfaces.

*G14.901**G14.902 Topics in Mathematics*

Physics

Many engineering and scientific organizations now recognize the need for including in their technical staffs persons whose principal training is in the field of physics. In recent years physics has advanced tremendously, and many of the theoretical and abstract concepts of modern physics have already found their way into current engineering practice. The engineer or scientist who has a broad training in the principles and techniques of classical and modern physics will be able to cope more effectively with these engineering-physical problems when they arise.

*G15.101**G15.102 Theoretical Physics (Offered in 1952-53)*

Preparation: G14.102 — Advanced Mathematics or equivalent

Course Content: The basic methods and fundamental theories forming the classical foundation of physics. A mathematical formulation of these concepts, illustrated in application to standard fields of physics, such as mechanics, electromagnetic fields, thermodynamics, hydrodynamics, and, if time permits, the extension of these concepts to the more recent fields.

*G115.111**G15.112 Mathematical Physics (Offered in 1952-53)*

Preparation: G15.102 — Theoretical Physics or equivalent

Course Content: The formulation and solution of some of the partial differential equations of physics. Application of group theory to physical problems.

G15.200 Modern Physics (Offered in 1952-53)

Preparation: Differential Equations

Course Content: A survey of the historical background of physics leading to the failure of classical physics around 1900. The development of modern physics. This course forms an introduction to relativity, quantum theory, and nuclear physics.

G15.210 Introduction to Quantum Theory (Offered in 1952-53)

Preparation: G15.200 — Modern Physics or equivalent

Course Content: Postulational formulation of quantum mechanics. Application to some simple systems. Perturbation theory.

G15.220 Introduction to Nuclear Physics (Offered in 1952-53)

Preparation: G15.200 — Modern Physics or equivalent

Course Content: A discussion of the nucleus. Current theories of nuclear forces. Alpha, beta, and gamma ray spectra in nuclear disintegrations.

G15.225 Introduction to the Physics of Semiconductors (Offered in 1952-53)

Preparation: Differential Equations

Course Content: A study of the mechanisms of conduction in solids, excess electrons and holes as electron carriers, n-type and p-type semiconductors, p-n junctions, rectifiers and transistors. Comparison of metals, insulators, and semiconductors from an introductory quantum viewpoint. Considerations of crystal structures, surface states, and energy level diagrams.

G15.231

G15.232 Theory of Solids

Preparation: G15.720 — Statistical Mechanics and G15.210 — Quantum Theory

Course Content: Formulation of the problems of the solid state. A discussion of some modern theories of the solid state.

G15.250 Theory of Spectra

Preparation: G15.200 — Modern Physics, Differential Equations

Course Content: The origin and description of atomic and molecular spectra. The effect on spectra of magnetic and electric fields. Use of molecular symmetry in analyzing Raman and infra red spectra.

G15.315

G15.316 Theoretical Mechanics

Preparation: G14.102 — Advanced Mathematics

Course Content: Statics and dynamics. Formulation of mechanics according to Newton, Lagrange, and Hamilton. Transformation theory. Some application to particles and rigid bodies.

G15.400 Vibration and Sound (Offered in 1952-53)

Preparation: Differential Equations

Course Content: A general introduction to the theory of vibration and sound for students of physics and engineering, emphasizing the methods of physics in the formulation and solution of vibratory problems.

G15.500 Electromagnetic Theory (Short Course)

Preparation: Differential Equations, G14.102 — Advanced Mathematics

Course Content: A discussion of the properties of the electromagnetic field as described by Maxwell's equations. Formulation of the fundamental problems and a discussion of their solution. The course develops the properties and use of special functions, such as Spherical Harmonics, Legendre Polynomials, Fourier Integrals, etc., as needed.

G15.503**G15.504 Electromagnetic Theory (Offered in 1952-53)**

Preparation: G14.102 — Advanced Mathematics

Course Content: Classical theory of the electromagnetic field as described by Maxwell's equations. The static field and fields varying in time. Electromagnetic theory of light.

G15.611 Physical Optics

Preparation: Differential Equations.

Course Content: Elementary theory of diffraction, refraction, and polarization. An introduction to the electromagnetic theory of optics.

G15.710 Thermodynamics

Preparation: G14.102 — Advanced Mathematics

Course Content: A discussion and development of the laws of thermodynamics. Characteristic functions and transformations from one set of variables to another. Introduction of electrical variables and thermoelectricity. Thermodynamic equilibrium and shift from equilibrium.

G15.720 Kinetic Theory and Statistical Mechanics

Preparation: Thermodynamics, G14.102 — Advanced Mathematics

Course Content: Development of the thermodynamic laws from the point of view of kinetic theory and statistical mechanics. Discussion of Maxwell-Boltzmann, Fermi-Dirac, and Einstein-Bose statistics.

G15.741**G15.742 Chemical Physics**

Preparation: G14.102 — Advanced Mathematics

Course Content: An introduction to the borderline field between chemistry and physics, as exemplified in thermodynamics, kinetic theory, statistical mechanics, and spectroscopy. Simple systems. Mixtures of simple systems. Equilibrium, shift from equilibrium, and the Gibbs phase rule. Maxwell-Boltzmann, Einstein-Bose, Fermi-Dirac statistics. Atomic and molecular spectra.

G15.901**G15.902 Topics in Physics**

Courses Offered in 1952-53

FIRST SEMESTER	SECOND SEMESTER
G 1.113 Engineering Photogrammetry	G 1.114 Engineering Photogrammetry
G 1.201 Sanitary Engineering	G 1.202 Sanitary Engineering
G 1.203 Sanitary Chemistry	G 1.204 Sanitary Bacteriology
G 1.213 Hydrology	G 1.214 Hydrology
G 1.401 Indeterminate Structures	G 1.402 Indeterminate Structures
G 1.403 Indeterminate Structures	G 1.504 Soil Mechanics
G 1.503 Soil Mechanics	G 1.602 Design of Structures
G 1.505 Soil Mechanics	G 1.701 Contracts, Specifications
G 1.601 Design of Structures	G 2.200 Advanced Mech. of Materials
G 2.200 Advanced Mech. of Materials	G 2.202 Theory of Elasticity
G 2.201 Theory of Elasticity	G 2.214 Advanced Dynamics
G 2.213 Advanced Dynamics	G 2.222 Fluid Mechanics
G 2.221 Fluid Mechanics	G 2.302 Heat Transfer
G 2.301 Heat Transfer	G 2.312 Advanced Thermodynamics
G 2.311 Advanced Thermodynamics	G 2.402 Fans
G 2.401 Pumps	G 2.502 Power Plant Economics
G 2.501 Power Plant Economics	G 2.702 Metallography
G 2.701 Metallography	G 3.102 Servomechanisms
G 3.101 Servomechanisms	G 3.202 Pulse Circuits
G 3.201 Pulse Circuits	G 3.302 Theory of Microwaves
G 3.301 Theory of Microwaves	G 3.311 High Voltage Engineering
G 3.401 Transients	G 3.402 Transients
G 3.402 Transients	G 3.403 Transients
G 3.501 Communication Theory	G 3.502 Communication Theory
G 3.601 Industrial Electronics	G 3.602 Semi-Conductor Engineering
G 3.611 Advanced A-C Machinery	G 3.612 Advanced A-C Machinery
G 3.701 Electronic Engineering	G 3.702 Electronic Engineering
G 3.901 Communication Networks	G 3.902 Communication Networks
G 3.911 Electric Power Circuits	G 3.912 Electric Power Circuits
G 3.915 Electric Power Distribution	G 4.102 Gas Absorption
G 4.101 Distillation	G 4.502 Industrial Process Control
G 4.501 Fund. of Instrumentation	G 4.602 Chem. Eng. Kinetics
G 4.601 Chem. Eng. Kinetics	G11.112 Adv. Inorganic Chemistry
G11.111 Adv. Inorganic Chemistry	G11.236 Adv. Organic Chemistry
G11.235 Adv. Organic Chemistry	G11.240 Mech. of Organic Reactions
G11.331 Adv. Physical Chemistry	G11.332 Adv. Physical Chemistry
G11.340 Nuclear Chemistry	G14.50 Elem. Diff. Equations
G14.50 Elem. Diff. Equations	G14.101 Advanced Mathematics
G14.101 Advanced Mathematics	G14.102 Advanced Mathematics
G14.102 Advanced Mathematics	G14.220 Statistics for Engineers
G14.207 Mod. Computational Methods	G14.300 Fourier Series
G14.230 Probability	G14.310 Vector Analysis
G14.240 Higher Algebra	G14.320 Complex Variables
G14.320 Complex Variables	G15.102 Theoretical Physics
G15.101 Theoretical Physics	G15.112 Mathematical Physics
G15.111 Mathematical Physics	G15.200 Modern Physics
G15.200 Modern Physics	G15.220 Nuclear Physics
G15.210 Quantum Theory	G15.400 Vibration and Sound
G15.225 Physics of Semi-conductors	G15.504 Electromagnetic Theory
G15.503 Electromagnetic Theory	

The registration circulars issued in August and December provide details regarding class meeting times, room assignments, and teaching staff for the Fall Session and Winter Session, respectively. Information concerning Summer Session offerings will be found in the Summer Session circular which is issued in April. Copies of this Bulletin and of the circulars may be obtained from the Office of the Director of Engineering Graduate Study, Northeastern University, Boston 15, Massachusetts, or by calling COpley 7-6600.

Date_____

DR. HERBERT K. BROWN
Director of Engineering Graduate Study
Northeastern University, Boston 15, Massachusetts

DEAR SIR:

I wish to register for the 1952-1953 school year of the Graduate Division of the College of Engineering and wish to enroll in the courses checked below:

FIRST SEMESTER

- ☐ G 1.113 Engineering Photogrammetry
☐ G 1.201 Sanitary Engineering
☐ G 1.203 Sanitary Chemistry
☐ G 1.213 Hydrology
☐ G 1.401 Indeterminate Structures
☐ G 1.403 Indeterminate Structures
☐ G 1.503 Soil Mechanics
☐ G 1.505 Soil Mechanics
☐ G 1.601 Design of Structures
☐ G 2.200 Advanced Mech. of Materials
☐ G 2.201 Theory of Elasticity
☐ G 2.213 Advanced Dynamics
☐ G 2.221 Fluid Mechanics
☐ G 2.301 Heat Transfer
☐ G 2.311 Advanced Thermodynamics
☐ G 2.401 Pumps
☐ G 2.501 Power Plant Economics
☐ G 2.701 Metallography
☐ G 3.101 Servomechanisms
☐ G 3.201 Pulse Circuits
☐ G 3.301 Theory of Microwaves
☐ G 3.401 Transients
☐ G 3.402 Transients
☐ G 3.501 Communication Theory
☐ G 3.601 Industrial Electronics
☐ G 3.611 Advanced A-C Machinery
☐ G 3.701 Electronic Engineering
☐ G 3.901 Communication Networks
☐ G 3.911 Electric Power Circuits
☐ G 3.915 Electric Power Distribution
☐ G 4.101 Distillation
☐ G 4.501 Fund. of Instrumentation
☐ G 4.601 Chem. Eng. Kinetics
☐ G11.111 Adv. Inorganic Chemistry
☐ G11.235 Adv. Organic Chemistry
☐ G11.331 Adv. Physical Chemistry
☐ G11.340 Nuclear Chemistry
☐ G14.50 Elem. Diff. Equations
☐ G14.101 Advanced Mathematics
☐ G14.102 Advanced Mathematics
☐ G14.207 Mod. Computational Methods
☐ G14.230 Probability
☐ G14.240 Higher Algebra
☐ G14.320 Complex Variables
☐ G15.101 Theoretical Physics
☐ G15.111 Mathematical Physics
☐ G15.200 Modern Physics
☐ G15.210 Quantum Theory
☐ G15.225 Physics of Semi-conductors
☐ G15.503 Electromagnetic Theory

SECOND SEMESTER

- ☐ G 1.114 Engineering Photogrammetry
☐ G 1.202 Sanitary Engineering
☐ G 1.204 Sanitary Bacteriology
☐ G 1.214 Hydrology
☐ G 1.402 Indeterminate Structures
☐ G 1.504 Soil Mechanics
☐ G 1.602 Design of Structures
☐ G 1.701 Contracts, Specifications
☐ G 2.200 Advanced Mech. of Materials
☐ G 2.202 Theory of Elasticity
☐ G 2.214 Advanced Dynamics
☐ G 2.222 Fluid Mechanics
☐ G 2.302 Heat Transfer
☐ G 2.312 Advanced Thermodynamics
☐ G 2.402 Fans
☐ G 2.502 Power Plant Economics
☐ G 2.702 Metallography
☐ G 3.102 Servomechanisms
☐ G 3.202 Pulse Circuits
☐ G 3.302 Theory of Microwaves
☐ G 3.311 High Voltage Engineering
☐ G 3.402 Transients
☐ G 3.403 Transients
☐ G 3.502 Communication Theory
☐ G 3.602 Semi-Conductor Engineering
☐ G 3.612 Advanced A-C Machinery
☐ G 3.702 Electronic Engineering
☐ G 3.902 Communication Networks
☐ G 3.912 Electric Power Circuits
☐ G 4.102 Gas Absorption
☐ G 4.502 Industrial Process Control
☐ G 4.602 Chem. Eng. Kinetics
☐ G11.112 Adv. Inorganic Chemistry
☐ G11.236 Adv. Organic Chemistry
☐ G11.240 Mech. of Organic Reactions
☐ G11.332 Adv. Physical Chemistry
☐ G14.50 Elem. Diff. Equations
☐ G14.101 Advanced Mathematics
☐ G14.102 Advanced Mathematics
☐ G14.220 Statistics for Engineers
☐ G14.300 Fourier Series
☐ G14.310 Vector Analysis
☐ G14.320 Complex Variables
☐ G15.102 Theoretical Physics
☐ G15.112 Mathematical Physics
☐ G15.200 Modern Physics
☐ G15.220 Nuclear Physics
☐ G15.400 Vibration and Sound
☐ G15.504 Electromagnetic Theory

NAME _____
(Print) First Middle Last

HOME ADDRESS _____
Street City Zone State Phone

BUSINESS ADDRESS _____
Firm's Name

Street City State Phone Ext.

NORTHEASTERN UNIVERSITY

(COEDUCATIONAL)

***COLLEGE OF LIBERAL ARTS**

Offers a broad program of subjects serving as a foundation for the understanding of modern culture, social relations, and technical achievement. Varied opportunities are available for vocational specialization. Degree: Bachelor of Science or Bachelor of Arts.

***COLLEGE OF ENGINEERING**

Offers curricula in Civil, Mechanical, Electrical, Chemical, and Industrial Engineering. Classroom study is supplemented by experiment and research in well-equipped laboratories. Degree: Bachelor of Science in the professional field of specialization.

The College of Engineering also offers during evening hours graduate programs of instruction leading to the degree of Master of Science in certain fields of civil, mechanical, and electrical engineering.

***COLLEGE OF BUSINESS ADMINISTRATION**

Offers curricula in Accounting, Industrial Relations, Marketing and Advertising, Finance and Insurance, and Business Management. Each curriculum represents in itself a broad survey of business technique, differing from the others chiefly in emphasis. Degree: Bachelor of Science in Business Administration.

SCHOOL OF LAW

Offers day and evening undergraduate programs. Admits those who present a minimum of one-half of the work accepted for a bachelor's degree in an approved college or its full equivalent. Degree: Bachelor of Laws. Also offers a graduate program leading to the degree of Master of Laws.

SCHOOL OF BUSINESS

Offers curricula through evening classes in Accounting, Business Management, Industrial Management, Marketing, Law and Business, Engineering and Management. Conducts certificate programs in the Labor Relations Institute, Institute of Retailing, Real Estate Institute, Office Management Institute, Institute of Insurance, and the Traffic Management Institute. Arranges intensive programs of one or more courses to serve special needs. Degree: Bachelor of Business Administration with appropriate specification.

The Graduate Division of the School of Business provides an evening program of graduate study leading to the degree of Master of Business Administration.

EVENING DIVISION OF THE COLLEGE OF LIBERAL ARTS

Offers courses in the fields of Economics, English, History, Government, Philosophy, Psychology, and Sociology; the program is equivalent in hours to one-half the requirement for the bachelor's degree, and prepares for the study of law and further study in Liberal Arts; special courses may be arranged. Degrees: Associate in Arts and Associate in Social Sciences.

***The Co-operative Plan**

The Colleges of Liberal Arts, Engineering, and Business Administration offer day programs and are conducted on the Co-operative Plan. After the freshman year students alternate periods of study with periods of work in the employ of business or industrial concerns. Under this plan they gain valuable experience and earn a large part of their college expenses. Full-time curricula are available for preprofessional students who do not desire the Co-operative Plan.

For further information regarding any of the above schools, address

NORTHEASTERN UNIVERSITY

BOSTON, MASSACHUSETTS

School of Law

Other Schools

47 MT. VERNON STREET

360 HUNTINGTON AVENUE



NORTHEASTERN UNIVERSITY
SCHOOL OF LAW

Courses For Lawyers

1952 - 1953

CONTINUING EDUCATION
IN THE LAW
FOR
MEMBERS OF THE BAR

FOR LAWYERS

The responsibility of a law school is to provide educational programs which fit into our legal system as an integrated and successful part. This includes the duty of a law school not only to instruct prospective lawyers, but also to offer opportunities for the further instruction of practicing lawyers themselves. The profession, on its part, should accept and use the law schools as a continuing force in post-admission growth and education in the law.

This booklet describes the program which has been established at Northeastern University School of Law for practicing lawyers who desire to continue their education in the law.

LOWELL S. NICHOLSON, *Dean*

NORTHEASTERN UNIVERSITY

School of Law

GRADUATE DIVISION

1952-1953

History and Policy

After a lapse of four years due to the war, Northeastern University School of Law resumed the operation of its Graduate Division in the Fall of 1947.

Although the traditional function of the graduate department of the American law school has been to train men for the teaching of law, a distinctly different policy has been followed at Northeastern. The primary purpose which led this School of Law to resume operation of its Graduate Division was to provide a substantial program of organized study for the members of the bar.

During the last two decades many important fields such as taxation, labor law, governmental regulation of business and administrative law, to mention but a few, have experienced unprecedented growth. Our Faculty was of opinion that such devices as "institutes" which were extensively employed after the war were of limited value and that as to many subjects there was widespread need for thorough academic treatment designed especially for the lawyer and that it was the duty of the metropolitan law schools to meet such need. The selection of courses for the Graduate Program has been made in accordance with the foregoing considerations.

The response from the bar has been gratifying. Since our Graduate Division resumed operation in the Fall of 1947 over five hundred lawyers have been enrolled and it has become the largest in New England and the fourth largest in the United States.

Ten to twenty hours of graduate work are scheduled in each semester, some being restricted to members of the bar. In addition the students in the Graduate Division have the privilege of enrolling in the upper-class courses in the general curriculum.

The courses especially designed for the graduate students are scheduled in the late afternoon and early evening.

Requirements for Admission

In order to be eligible for admission to the Graduate Division an applicant must be either a member of the bar or a graduate of an accredited law school. One may enroll either as a candidate for the degree of *Master of Laws* or *Master of Laws in Taxation* or in individual courses according to his needs without seeking academic credits.

The School of Law

Northeastern University School of Law, the first of several schools and colleges of Northeastern University, was established in 1898. The purposes of the School of Law are to prepare men and women for the active practice of the profession throughout the common law jurisdictions, more particularly in Massachusetts and the other New England States, and to provide graduate legal training for those who are desirous of enhancing their professional qualifications. The success of the School in achieving these purposes has been due in no small part to the faculty members who throughout the years have taught at the School of Law. In addition to the full-time teachers, outstanding leaders in the profession and noted specialists in particular fields of the law give many of the courses. The School in this manner relates the work of the classroom to the active practice of the profession.

Northeastern University School of Law meets the requirements of the Section of Legal Education and Admissions to the Bar of the American Bar Association and is on the list of approved schools of that body. The School is a member of the Association of American Law Schools. It is also registered as an approved school by the Board of Regents of the University of the State of New York.

The Law School Library contains more than 22,000 volumes and is steadily growing. It is so arranged as to give students direct access to the books in the stacks as well as in the reading room.

Application for Admission

Application for admission to the Graduate Division should be made as early as possible before the beginning of the fall term. Classes commence on Monday, September 15, 1952.

A form of application for admission will be sent upon request addressed to Lowell S. Nicholson, Dean, Northeastern University School of Law, 47 Mt. Vernon Street, Boston 8, Massachusetts. Telephone: Copley 7-6600, Ext. 281.

Following the acceptance of the application for admission, the applicant must register in person at the School of Law prior to the commencement of classes.

Tuition and Fees

The following schedule of tuition charges and fees is effective in the fall term, September, 1952:

APPLICATION FEE	\$ 5.00
TUITION PER SEMESTER HOUR	18.00
MASTER'S THESIS FEE	40.00
LIBRARY FEE (each term)	5.00
LATE REGISTRATION FEE	2.00
GRADUATION FEE	15.00

Requirements for the Degree

The program for meeting the requirements for the degree of *Master of Laws* has been prepared so that the work can be completed in two or three consecutive years by students who are devoting only a portion of their time to the study of law. Students who are devoting their full time to working for the degree of *Master of Laws* may, upon special vote of the Faculty, be allowed to complete their work within a shorter period. The requirements for the degree of *Master of Laws* must be completed in not more than three consecutive academic years, and exceptions to this rule will be made only upon special vote of the Faculty, upon petition presented and for good cause shown.

The degree of *Master of Laws* will be conferred upon those candidates who are of good moral character and who

- (1) have completed not less than twenty-four semester hours of courses prescribed by the Committee on Administration, including the course on *Jurisprudence and Legal History*, and have attained a minimum weighted average of 80% or better; and
- (2) have presented a legal thesis, complying with the requirements stated below, written under the direction of and satisfactory to the Faculty; and
- (3) have been recommended for the degree of *Master of Laws* by the Committee on Administration.

The thesis required of candidates for the degree of *Master of Laws* shall be based upon original research and upon a subject approved by the Faculty as one worthy of the graduate degree. The work required of the student in preparation of his thesis is expected to be at least equivalent to the work required to obtain three semester hours of credit in a graduate course. Two typewritten copies of the thesis, in final form, must be submitted not later than two months before the degree is to be awarded.

Master of Laws in Taxation

The degree of *Master of Laws* with specification in Taxation will be awarded to those candidates who have met all the above requirements for the degree and whose work has included a minimum of twelve hours of tax courses, and whose thesis is in the field of taxation.

Graduate Division Rules

Five of the special rules of the School of Law relate particularly to the students in the Graduate Division, as follows:

21. Each student in the Graduate Division will be classified upon entry either as a Candidate or as a Special Student, depending upon whether or not he is a candidate for the degree of *Master of Laws*. Thereafter a Special Student may become a Candidate only by vote of the Committee on Administration. When such a change is allowed all of the courses already completed by the student (except those which duplicate undergraduate work) will be considered a part of his degree program, and all will be weighted in computing his general average under Rules 23 and 24.
22. A Candidate may not register for courses in any semester without prior approval of his program by the Chairman of the Graduate Division.
23. Every student in the Graduate Division must maintain a satisfactory level of scholarship. No course may be repeated or made up. A Candidate for the Master's Degree must maintain at all times a weighted average of 80% or above. In case his weighted average should at any time drop below 80%, the Committee on Administration may, in its discretion, refuse to allow him to continue as a Candidate for the degree.
24. A Candidate's final weighted average will be computed at the end of that semester in which his total number of semester hours reaches 24 and will be based upon all the courses taken up to that time.
25. A Candidate for the degree of *Master of Laws* must have his thesis topic approved by the Chairman of the Graduate Division no later than two weeks after the start of the semester in which he expects to be awarded the degree. If the topic is approved the candidate must thereafter submit a detailed outline of the thesis, indicating in some particularity the area he will cover.

Graduate Curriculum

The Graduate Program includes the courses selected especially for the graduate students and also the elective courses and certain regular courses available to graduates and members of the upperclasses. The courses included in this program and the semester hours of credit for each course are as follows:

1952-1953

<i>First Semester</i>		<i>Second Semester</i>	
Federal Taxation	3	Federal Taxation	2
Mass. and Trial Practice	2	Mass. and Trial Practice	2
Labor Law	3	Creditors' Rights	2
Probate Practice	2	Estate Planning	2
Administrative Law	3	Federal Jurisdiction	3
State and Local Taxation	2	Federal Tax Procedure	2
Tax Problems of Fiduciaries	2	Taxation of Corps. and Parts.	2
Legal Accounting	2	Divorce and Separation	1
Seminar on Excess Profits Tax	2	Jurisprudence	2
Seminar on Constitutional Law Problems	2	Business and Family Transactions	2
		Seminar on Legal Psychiatry	2

1953-1954

Trade Regulations	2	Insurance	2
Conveyancing	2	Future Interests	3
Patents	2	Corporate Finance	2
Seminar on Tax Problems of Insurance and Pensions	2	Seminar on Labor Law	2
Legislation	2	Admiralty	2
Damages	2	Local Government Law	2
World Law	2	Social Legislation	2
		Taxation of Real Prop. Trans.	2
		Landlord and Tenant	2

Class Assignments for Fall Term 1952

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
4:30		Probate Practice <i>Mr. Lee</i> 4:30-6:20	Seminar on Excess Profits Tax <i>Mr. Stuetzer</i>	Seminar on Constitutional Law Problems <i>Prof. O'Toole</i> 4:30-6:20	
6:00 to 6:50	Mass. & Trial Practice <i>Mr. Gahan</i>	State and Local Taxation <i>Mr. Long</i> 6:30-8:20	5:15-7:05 Labor Law <i>Prof. Roitman</i> 6:00-7:50	Tax Problems of Fiduciaries <i>Mr. Price</i> 6:30-8:20	
7:00 to 7:50	Mass. & Trial Practice <i>Mr. Gahan</i>		Federal Taxation <i>Mr. Cormier</i> 8:00-9:50		Labor Law <i>Prof. Roitman</i> 8:00-8:50
8:00 to 8:50	Administrative Law <i>Mr. Parkman</i>		Legal Accounting <i>Mr. Stuetzer</i> 8:00-9:50		Administrative Law <i>Mr. Parkman</i> 8:00-8:50
9:00 to 9:50	Administrative Law <i>Mr. Parkman</i>				

Description of Courses

*Courses offered during 1953-1954 but
not in 1952-1953.

Administrative Law

Three hours
First semester

The constitutional problems involved in the creation of agencies to administer law. The method of statutory creation and the manner in which some of the more important of these agencies function. Rule making powers. Problems dealing with adequate notice and fair hearing (evidence and procedure, type of tribunal and necessity of findings). The nature and scope of control by courts over administrative determinations. Attention throughout the course will be directed to the Administrative Procedure Act and Massachusetts cases involving administrative agencies. Mr. Parkman.

*Admiralty and Maritime Law

Two hours
Second semester

Federal and State jurisdiction. Jurisdiction over waters, craft, contracts, torts, and crimes. Maritime liens; rights of maritime workers. Carriage of goods. Charter parties; salvage; general average; marine insurance; pilotage; towage; collision and limitation of liability; pleading and procedure. Mr. Stinchfield.

Roger A. Stinchfield, lecturer in *Admiralty and Maritime Law*, obtained his education at Colby College (B.S. 1926), and Suffolk Law School (LL.B. 1930, LL.M. 1937). He was admitted to practice in Massachusetts and also in Maine in 1930. He has been Deputy Clerk and Clerk of the United States Court of Appeals, First Circuit, from 1928 to date. He has taught Admiralty for many years and has published notes on the subject.

Constitutional Law Problems

Two hours
First semester

A selection of current cases and issues in constitutional law, studied with reference to their historical background and their political, economic, and social implication. Paper to be prepared by each student. Enrollment limited to fifteen. Professor O'Toole.

Prerequisite: The course in *Constitutional Law* or its equivalent.

Thomas J. O'Toole, Associate Professor of Law, received his A.B., M.A., and LL.B. from Harvard University. He served as a Law Clerk to the Justices of the Supreme Judicial Court, 1947-1948. After a year of general practice he came to Northeastern as a fulltime faculty member in 1949.

Thursday evenings from 4:30 to 6:20.

***Conveyancing**

Two hours
First semester

A course in practical conveyancing. Agreements for purchase. Evidence of title. Deeds. Mortgages. Assignments. Partial Releases. Extensions. Discharges and Foreclosures of Mortgages. Systems of recording and registering title. Mr. Swaim.

Prerequisite: A course or practical experience in the field of conveyancing.

Roger D. Swaim, lecturer in *Conveyancing*, obtained his education at Harvard University (A.B. 1901, LL.B. 1903). He has been engaged in the practice of law since 1903, specializing in the field of conveyancing, and he is the author of many books on that subject. He is a partner in Hale & Dorr, at 60 State Street, Boston.

***Corporate Finance**

Two hours
Second semester

A study of the law relating to the capitalization and the financial operations of corporations. Judicial and administrative requirements concerning valuation and accounting, corporate merger, consolidation, purchase and sale of assets, holding company relationships, recapitalizations, administration of surplus, and stockholder distributions. Mr. Herwitz.

Prerequisite: The course in *Corporations* or its equivalent.

David R. Herwitz, lecturer in *Corporate Finance*, obtained his education at Massachusetts Institute of Technology (B.S., 1946) and Harvard Law School (LL.B., m.c.l., 1949). Formerly an attorney for the United States Tax Court, he is now associated with Mintz, Levin & Cohn, 50 Federal Street, Boston.

Creditors' Rights

Two hours
Second semester

Jurisdiction in bankruptcy; adjudication; administration; discharge. Emphasis is placed on fraudulent conveyances, preferences, claims of creditors, and discharge. Corporate Reorganizations, and Arrangements. Consideration is given to non-bankruptcy liquidations, including assignments for the benefit of creditors. Mr. Aldrich.

C. Duane Aldrich, lecturer in *Creditors' Rights* and *Insurance*, obtained his education at Harvard College (B.S. 1940), and Harvard Law School (LL.B. 1948). He is with Palmer, Dodge, Gardner, Bickford & Bradford at 53 State Street, Boston.

Divorce and Separation

One hour
Second semester

Nature and requirements of marriage. Relations between husband and wife. Dissolution of marriage by annulment or divorce. Separate support,

and decrees for living apart. Premarital contracts; separation agreements. Practice and procedure in the Probate Court. Mr. Kingston.

Prerequisite: This course is limited to members of the bar.

Allan Roy Kingston, lecturer in *Divorce and Separation*, received his education at Northeastern University (LL.B. 1933). He was admitted to the Massachusetts bar in 1933. He has been engaged in private practice since that time, specializing in probate work and conveyancing, first with Hale, Sanderson, Byrnes & Morton, of Boston, and more recently as senior partner in the firm of Kingston, Coffin & Jones, of Somerville. His office is at 421 Highland Avenue, Somerville.

Estate Planning

Two hours

Second semester

Estate planning embraces the counselling of estate owners and the preparation of necessary legal instruments, to ensure the maximum enjoyment of property. Course includes lectures on estate-planning aspects of wills, trusts, insurance, and taxation (inheritance, estate, gift, and income). Mr. Price.

Prerequisite: Limited to students who have completed or are enrolled in the course in Federal Taxation, or have its equivalent.

See Biographical sketch of Robert D. Price, lecturer in *Estate Planning*, under the course heading of *Tax Problems of the Fiduciary*.

Federal Jurisdiction

Three hours

Second semester

Jurisdiction and procedure in federal courts; diversity of citizenship. Removal jurisdiction and procedure. Concurrent jurisdiction of state and federal judicial systems. Substantive law applied in the federal courts. Procedure under the Federal Rules of Civil Procedure: venue, process, parties, joinder, pleadings, motions, and trials. Appellate jurisdiction and procedure in the Court of Appeals and the Supreme Court of the United States. Professor Roitman.

Harold B. Roitman, lecturer in *Federal Jurisdiction* and *Labor Law*, received his education at Dartmouth College (A.B. 1935), and Harvard Law School (LL.B. 1942). He was admitted to the bar in Massachusetts in 1942. He was Law Clerk of the Massachusetts Supreme Judicial Court in 1942-1943, and he was engaged in active practice in Boston from 1943 until 1948 when he became a full-time instructor at Northeastern University School of Law.

Federal Taxation

Five hours

Both semesters

The problems involved in the federal taxation of individuals and business associations. Special consideration will be given to the estate, gift and income taxes, and the manner in which they interrelate in the taxation of individuals, trusts and business associations. Study of the structure of the present Internal

Revenue Code, regulations, and other administrative and judicial interpretations thereof. Procedure in the courts and before administrative officers. Mr. Cormier.

Roland A. Cormier, lecturer in *Federal Taxation*, received his education at Assumption College (A.B. 1936), and Georgetown University (LL.B. 1940). He was admitted to the Massachusetts bar in 1944. He has been engaged in tax work in various positions since 1937, and at the present time is in charge of the Tax Department of the firm of Ely, Bartlett, Thompson & Brown, 49 Federal Street, Boston.

Wednesday evenings from 8:00 to 9:50.

Federal Taxation of Corporations and Partnerships *Two hours* *Second semester*

Taxation of corporations and partnerships under the federal income tax laws, including consideration of current corporate and partnership income tax problems such as capital readjustments, reorganizations, distributions to shareholders and partners. Mr. Gibbons.

Prerequisite: The course in *Federal Taxation*, or its equivalent.

Walter F. Gibbons, instructor in *Taxation of Corporations and Partnerships* received his education at Providence College (A.B. 1939), and Catholic University School of Law (LL.B. 1942). He has specialized in taxation work since 1943, and has been an instructor in that subject during the past five years. He is now associated in tax work with James F. Armstrong, Esq., of Providence, Rhode Island.

Federal Tax Procedure *Two hours* *Second semester*

Organization of the Bureau of Internal Revenue, and practice before its administrative units. Returns, assessments, and collection of tax; Statute of Limitations; waivers; deficiency determinations; overpayments, overassessments, refunds; penalties. Criminal prosecution. Settlement negotiations; offers in compromise; closing agreements; transferee liability. Jurisdiction of federal courts in tax litigation. Pleading and practice before the Tax Court. Suits for recovery and refund. Appellate review of decisions. Mr. Silcox.

Prerequisite: The course in *Federal Taxation*, or its equivalent.

Walter G. Silcox, instructor in *Federal Tax Procedure*, was educated at Southeastern University, Washington, D. C. where he obtained the degrees of B.C.S., 1921, M.C.S., 1922 and LL.B., 1931. He is a member of the bar of the United States Supreme Court, the District of Columbia and Massachusetts and is Assistant Head of the New England Division of the Technical Staff of the Bureau of Internal Revenue.

*Insurance *Two hours* *Second semester*

The concepts of insurable interest in property, liability and life insurance. The important aspects of policy writing, including warranties, representa-

tion, concealment, and waiver. Regulation of the insurance business by government. Mr. Aldrich.

See biographical sketch of C. Duane Aldrich, lecturer in *Insurance*, under the course heading of *Creditors' Rights*.

Jurisprudence and Legal History

Two hours
Second semester

Study and comparison of the world's developed systems of law. The machinery of justice, the social interests recognized and protected, salient geographical and other factors shaping law, and important theories as to the nature and purpose of law, in each legal system and in important periods thereof. Chief attention is given to the Anglo-American legal system. Dr. Hadley.

Prerequisite: This course will be limited to Graduate Students.

Edwin W. Hadley, instructor in *Jurisprudence and Legal History*, obtained his education at Stanford University (A.B. 1920, J.D. 1923), and at Harvard Law School (LL.M. 1929). He was admitted to the bar in California in 1923, in Indiana in 1925, and in Massachusetts in 1934. He has been an instructor in law at several law schools, and has taught many subjects. Professor Hadley has been with Northeastern University School of Law since 1931. He is engaged in the general practice of law with the firm of Gallup & Hadley at 6 Beacon Street, Boston.

Labor Law

Three hours
First semester

Problems relating to labor organizations and collective bargaining, including legal aspects of various forms of concerted activity such as strikes, picketing, and related activities. The labor injunction, including federal and state anti-injunction statutes. Administration and application of the Labor-Management Relations Act of 1947 and related statutes. Legal aspects of the collective labor agreement. The regulation of labor unions. Emphasis on recent cases and legislation. Gregory & Katz, *Cases and Materials on Labor Law* (1948). Prentice-Hall *Students' Labor Service*. Professor Roitman.

See biographical sketch of Harold B. Roitman, lecturer in *Labor Law*, under the course heading of *Federal Jurisdiction*.

*Labor Law Seminar

Two hours
Second semester

An advanced study of critical legal problems arising out of labor relations. Analysis and research into problems of collective bargaining, including the effect of typical contractual provisions, the operation of grievance procedures and arbitration provisions, and the impact of state and federal legislation on the relations between collective bargaining representatives. Each student will be required to prepare written papers and oral reports of specific practical problems. Professor Roitman.

Prerequisite: The seminar is open to those students only who have completed a basic course in labor law or who have been granted permission by the instructor because of some special qualification.

See biographical sketch of Harold B. Roitman, lecturer in *Labor Law Seminar*, under the course heading of *Federal Jurisdiction*.

*Landlord and Tenant

Two hours
Second semester

This course covers the landlord-tenant relationship in general and the legal situations which arise between the parties. The standard form of lease and all its provisions will be covered. A substantial amount of drafting of leases will be required. Mr. Schwartz.

Edward L. Schwartz, instructor in *Landlord and Tenant*, obtained his education at City College of New York (A.B. 1931), and Harvard Law School (LL.B. 1934). He was admitted to the Massachusetts bar in 1934. He has done a great deal of work in connection with leases and landlord and tenant law, and is the author of a new handbook on "The Preparation of Leases". Mr. Schwartz is one of the Massachusetts Commissioners on Uniform State Laws. His office is at 10 State Street, Boston.

Legal Accounting

Two hours
First semester

The basic patterns of business, corporate and tax accounting. Accounting principles and procedures and statements. Cases in which accounting problems have been presented in court. Designed for students with no previous accounting background. Mr. Stuetzer.

Herman Stuetzer, Jr., lecturer in *Legal Accounting* and *Excess Profits Tax*, obtained his education at Cornell University (A.B. 1931), (LL.B. 1933). He was admitted to the bar in New York in 1934 and in Massachusetts in 1947. He has had experience as tax counsel for industrial firms, and in Boston he has been with Herrick, Smith, Donald, Farley & Ketchum, and at the present time he is associated with Lybrand, Ross Bros. and Montgomery. He has taught tax courses and has published articles on tax and other legal subjects. His office is at 80 Federal Street, Boston.

Wednesday evenings from 8:00 to 9:50.

Legal Psychiatry Seminar

Two hours
Second semester

A detailed examination of the development of the law and its relation to the court offender with a disturbed personality. Included are a study of the legal test of mental responsibility in the light of current psychiatric knowledge, critique of sentencing procedures, the psychopathic personality, the sex offender, the effect of prison on personality disorders, civil commitment and treatment of insane persons, and probation and parole principles and practices. Mr. Berlin

Prerequisite: This course will be open to a limited number of lawyers, doctors, social workers, and probation officers. Permission of the instructor is required.

Gerald A. Berlin, lecturer in *Legal Psychiatry*, received his education at the University of Virginia (B.A. 1940) and Yale Law School (LL.B. 1947). He was admitted to the Massachusetts bar in 1948 and has been engaged in active practice since then. At present he is associated with Muchnick and Bearak. He has done extensive research in the field of law and psychiatry and is co-author of a study on this subject published under the auspices of the State Department of Mental Health.

Massachusetts and Trial Practice

Four hours

Both semesters

Divisions of courts in Massachusetts and jurisdiction of each. Venue. Commencement of actions; attachments; pleadings; discovery before trial; interrogatories and depositions, and notice to admit facts; set-off and recoupment; costs: tender, offer of judgment. Trial procedure; the application of pleadings to the trial; interrogation of witnesses; requests for rulings, and for instructions to jury; motions for directed verdict; motions for new trial. Appeals; exceptions; reports and reservations. Preparation of record for Supreme Judicial Court. Preparation and presentation of trial and appellate arguments. Judgment and execution. Equity practice and pleading in Massachusetts. Mr. Gahan.

James C. Gahan, Jr., lecturer in *Massachusetts and Trial Practice*, received his education at Harvard University (A.B., 1936, LL.B., 1940). He is admitted to practice in Massachusetts and is a member of the firm of Brown, Field & McCarthy, 15 State Street, Boston.

Monday evenings from 6:00 to 7:50.

*Patents

Two hours

First semester

Substantive patent law. Property in unpatented inventions; property in patented inventions. The effect of the anti-trust laws; territorial limitations; notice of patent; sales, assignments and licenses of patent rights; patentability; infringement; reissues; disclaimers; and jurisdiction of courts in infringement, contract and declaratory judgment actions. Mr. Kenway.

Herbert P. Kenway, lecturer in *Patents*, received his education at Yale University (B.A. 1934), and studied law at George Washington University and New York University School of Law. He is a member of the bar of the District of Columbia and Massachusetts and is admitted to practice in the Patent Office. He is a member of the firm of Kenway, Jenney, Witter & Hildreth, 24 School Street, Boston 8, Mass.

Probate Practice

Two hours

First semester

A practical course in probate law and procedure, embracing the study of important statutes, court rules, decisions, and points of practice. Course includes lectures on inheritance and estate taxes and on probate accounting. Mr. Lee.

Tuesday evenings from 4:30 to 6:20.

Richard H. Lee, instructor in *Probate Practice* was educated at Bowdoin College (A.B., 1924), and Harvard Law School (LL.B., 1928). He is a member of the Massachusetts bar. His connection with the Faculty of Northeastern University School of Law long antedates World War II. He is engaged in the practice of law at 10 State Street, Boston, with Lloyd, Lee & Sherman.

Seminar on Excess Profits Tax

Two hours
First semester

Consideration of Excess Profits Tax Act of 1950 and amendments thereto: methods of computing tax, alternative credits, relief provisions, binding elections and possible pitfalls, exempt corporations, effect of reorganizations and liquidation, business planning in view of Excess Profits Tax. Mr. Stuetzer, Jr. C.C.H. *Excess Profits Act of 1950*; Regulations 130. Montgomery, *Excess Profits Tax*, 1950-1951 ed. (one vol.)

Prerequisite: A course in *Federal Taxation* or its equivalent is required.

See biographical sketch of Herman Stuetzer, Jr., lecturer in *Excess Profits Tax*, under the course heading of *Legal Accounting*.

Wednesday evenings from 5:15 to 7:05.

Seminar on Business and Family Transactions

Two hours
Second semester

Tax and other considerations affecting form of carrying on a closely-held business and the sale and purchase of such a business; income, gift, and estate tax aspects of gifts and transfers within a family group; including marriage, separation, and divorce agreements.

Materials, prerequisites and instructor to be announced later.

*Seminar on Insurance and Pensions

Two hours
First semester

Income, gift and estate tax aspects of life insurance, endowments and annuities; tax considerations in planning business and family insurance programs; tax aspects of pension plans and pensions; considerations involved in decision to adopt a pension plan and in choice of particular plan.

Materials, prerequisites and instructor to be announced later.

State and Local Taxation

Two hours
First semester

The problems involved in state (especially Massachusetts) taxation of individuals, business associations, and property. Special consideration will be given to inheritance and income taxes, the taxation of corporations and business associations, and the system of taxation upon real estate and personal property. The correlation between the state taxes and corresponding federal taxes. Procedure before state officers and the Appellate Tax Board. Mr. Long.

Tuesday evenings from 6:30 to 8:20.

Henry F. Long, lecturer in *State and Local Taxation*, has been the Massachusetts Commissioner of Corporations and Taxation since 1920. He was admitted to the bar of Massachusetts in 1923. He has taught the subject of State Taxation for many years.

Tax Problems of the Fiduciary

Two hours
First semester

Tax problems incident to the administration of trusts and estates, with particular emphasis on the income tax problems of fiduciaries and beneficiaries and the estate tax problems of executors and administrators. Mr. Price.

Prerequisite: The course in *Federal Taxation*, or its equivalent.

Thursday evenings from 6:30 to 8:20.

Robert D. Price, lecturer in *Tax Problems of the Fiduciary and Estate Planning* received his education at Cornell University (A.B. 1936), and the Harvard Law School (LL.B. 1940). He was with Ropes, Gray, Best, Coolidge & Rugg, doing tax work from 1940 to 1949. For the past two years he has been specializing in tax work as a partner with the firm of Vaughan, Esty, Crotty & Mason, at 332 Main Street, Worcester.

*Trade Regulations

Two hours
First semester

The significant developments, common law and statutory, in the formulation of national policy with respect to the regulation of business, with detailed consideration of the Sherman Act, the Clayton Act, the Robinson-Patman Act and the Federal Trade Commission Act, with emphasis on State developments.

*World Organization and International Law

Two hours
Both semesters

The course will take up international law as now understood and applied, also some of the historical and philosophical backgrounds of international law, jurisprudence and other factors affecting international law, the development of international and world law, including the Nuremburg trials, previous and present attempts and efforts at world government, jurisprudence, philosophy and geopolitics as they affect world organization. The purpose of the course is primarily to direct thought to future development rather than to past precedent in the fields of international law, world law and world organization. Mr. Mahony.

Thomas H. Mahony, lecturer in *World Organization and International Law*, received his education at Harvard University (1906), and Boston University School of Law (LL.B., 1909). He was admitted to the Massachusetts bar in 1909, and has been an active practitioner since that time. He is senior partner of the firm of Mahony, Bryer, Coffin & Willis. He has been active in world organization matters, and was a consultant to the State Department at the United Nations conference on international organization in San Francisco in 1945. His office is at 10 State Street, Boston.

Officers and Committees

Advisory Committee of the Corporation for the School of Law

ROBERT GRAY DODGE, *Chairman*, A.B., A.M., LL.B., Harvard University; LL.D., Tufts College and Northeastern University.

Palmer, Dodge, Gardner, Bickford & Bradford.

GEORGE LOUIS BARNES, LL.B., Boston University.

Allen & Barnes.

JOHN WELLS FARLEY, A.B., LL.B., Harvard University.

Herrick, Smith, Donald, Farley & Ketchum.

JACOB JOSEPH KAPLAN, A.B., LL.B., Harvard University.

Nutter, McClennen & Fish.

STUART CRAIG RAND, A.B., Yale; LL.B., Harvard University.

Choate, Hall & Stewart.

Administrative Officers of the School of Law

CARL STEPHENS ELL, A.B., DePauw University; S.B., M.S., Massachusetts Institute of Technology; Ed.M., Harvard University; Sc.D., DePauw University; LL.D., Tufts College.

President of the University.

EVERETT AVERY CHURCHILL, A.B., Wesleyan University; Ed.M., Ed.D., Harvard University.

Vice-President of the University.

LOWELL STARBUCK NICHOLSON, LL.B., Syracuse University.

Dean and Professor of Law at Northeastern University School of Law.

JOSEPH GERARD CRANE, A.B., Boston College; LL.B., Harvard University.

Assistant Dean and Professor of Law at Northeastern University School of Law.

Committee on Post-Admission Education of the Bar

BERTRAM H. LOEWENBERG	<i>Sherburne, Powers & Needham</i>
<i>Chairman</i>	
KENNETH W. BERGEN	<i>Warner, Stackpole, Stetson & Bradlee</i>
MARTIN W. COHEN	<i>Gallup & Hadley</i>
JOSEPH G. CRANE	<i>Northeastern University School of Law</i>
JAMES C. GAHAN, JR.	<i>Brown, Field & McCarthy</i>
RICHARD H. LEE	<i>Lloyd, Lee & Sherman</i>
THOMAS H. MAHONY	<i>Mahony, Bryer, Coffin & Willis</i>
LOWELL S. NICHOLSON	<i>Northeastern University School of Law</i>
EDWARD L. SCHWARTZ	<i>Attorney at Law</i>

Committee on the Taxation Program

KENNETH W. BERGEN	<i>Warner, Stackpole, Stetson & Bradlee</i>
<i>Chairman</i>	
ROLAND A. CORMIER	<i>Ely, Bartlett, Thompson & Brown</i>
DAVID FLOWER, JR.	<i>Raytheon Manufacturing Company</i>
H. BRIAN HOLLAND	<i>Ropes, Gray, Best, Coolidge & Rugg</i>
HENRY F. LONG	<i>Massachusetts Tax Commissioner</i>
LOWELL S. NICHOLSON	<i>Northeastern University School of Law</i>
HERMAN STUETZER, JR.	<i>Lybrand, Ross Bros. & Montgomery</i>
STANLEY S. SURREY	<i>Harvard Law School</i>

Faculty

LOWELL STARBUCK NICHOLSON, LL.B., Syracuse University
Dean and Professor of Law

JOSEPH GERARD CRANE, A.B., Boston College; LL.B., Harvard University
Assistant Dean and Professor of Law

EDWIN WILSON HADLEY, A.B., J.D., Stanford University; LL.M., Harvard University
Professor of Law

HAROLD BENJAMIN ROITMAN, A.B., Dartmouth College; LL.B., Harvard University
Associate Professor of Law

THOMAS JOSEPH O'TOOLE, A.B., A.M., LL.B., Harvard University
Associate Professor of Law

ROBERT TRASK MANN, B.S.B.A., University of Florida; M.A., George Washington University; LL.B., University of Florida
Assistant Professor of Law

C. DUANE ALDRICH, S.B., LL.B., Harvard University
Palmer, Dodge, Gardner, Bickford & Bradford
Lecturer in Creditors' Rights and Insurance

KENNETH W. BERGEN, A. B., Rutgers University; LL.B., Harvard University
Warner, Stackpole, Stetson & Bradlee
Director of Taxation Program

GERALD A. BERLIN, B.A., Virginia; LL.B., Yale University
Attorney at Law
Lecturer in Legal Psychiatry

MARTIN W. COHEN, LL.B., Northeastern University
Gallup & Hadley
Lecturer on Local Government Law

ROLAND A. CORMIER, A.B., Assumption College; LL.B., Georgetown University

Ely, Bartlett, Thompson & Brown

Lecturer in Federal Taxation

ARTHUR LOUIS ENO, JR., A.B., LL.B., Harvard University

Attorney at Law

Lecturer in Creditors' Rights

DAVID FLOWER, JR., A.B., LL.B., Harvard University

Attorney at Law

Lecturer in Federal Taxation

JAMES C. GAHAN, JR., A.B., LL.B., Harvard University

Brown, Field & McCarthy

Lecturer in Massachusetts and Trial Practice

WALTER F. GIBBONS, A.B., Providence College; LL.B., Catholic University

Attorney at Law, Providence, Rhode Island

Lecturer in Taxation of Corporations and Partnerships

DAVID RICHARD HERWITZ, B.S., Massachusetts Institute of Technology;

LL.B., Harvard University

Mintz, Levin & Cohn

Lecturer in Corporate Finance and Trusts

MARGRETA A. HUGHES

Librarian

HERBERT P. KENWAY, B.A., Yale University

Kenway, Jenney, Witter & Hildreth

Lecturer in Patent Law

ALLAN ROY KINGSTON, LL.B., Northeastern University

Kingston, Coffin & Jones

Lecturer in Divorce and Separation

GEORGE E. KINMONTH, JR., B.S., Tufts College; LL.B., Boston University

Attorney at Law, Mystic, Connecticut

Lecturer in Connecticut Practice

RICHARD H. LEE, A.B., Bowdoin College; LL.B., Harvard University
Lloyd, Lee & Sherman
Lecturer in Probate Practice

BERTRAM H. LOEWENBERG, A.B., LL.B., Harvard University
Sherburne, Powers & Needham
Lecturer in Corporations

HENRY F. LONG, Commissioner of Corporations and Taxation of the
Commonwealth of Massachusetts
Attorney at Law
Lecturer in State and Local Taxation

REUBEN L. LURIE, A.B., LL.B., Harvard University
Lurie, Alper & Gorovitz
Lecturer in Criminal Law

THOMAS H. MAHONY, LL.B., Boston University
Mahony, Bryer, Coffin & Willis
Lecturer in World Organization and International Law

CONRAD W. OBERDORFER, J.U.D., University of Munich; LL.B., North-
eastern University; LL.M., Harvard University
Choate, Hall & Stewart
Lecturer in Constitutional Law

ROBERT D. PRICE, A.B., Cornell University; LL.B., Harvard University
Vaughan, Esty, Crotty & Mason, of Worcester
Lecturer in Tax Problems of the Fiduciary and in Estate Planning

EDWARD LESTER SCHWARTZ, A.B., City College of New York; LL.B.,
Harvard University
Attorney at Law
*Lecturer in Real Property Transactions, Landlord and Tenant and
Legal Drafting*

WALTER G. SILCOX, B.C.S., M.C.S., LL.B., Southeastern University
Assistant Head, New England Division, Technical Staff, Bureau of
Internal Revenue

Lecturer in Federal Tax Procedure

H. PETER SOMERS, B.A., Cornell College; M.A., University of Iowa;
LL.B., Harvard University
Hill, Barlow, Goodale & Wiswall

Lecturer in Commercial Law

ROGER A. STINCHFIELD, B.S., Colby College; LL.B., LL.M., Suffolk
University
Attorney at Law

Lecturer in Admiralty and Maritime Law

HERMAN STUETZER, JR., A.B., LL.B., Cornell University
Lybrand, Ross Bros. & Montgomery

Lecturer in Legal Accounting and in Excess Profits Tax

ROGER D. SWAIM, A.B., LL.B., Harvard University
Hale & Dorr

Lecturer in Conveyancing

WILLIAM ROSS WHALON, A.B., Harvard University; LL.B., North-
eastern University
Attorney at Law

Lecturer in Contracts and in Damages

Office Staff

CARMELITA E. GERACI

Registrar and Secretary to the Dean

JEANNETTE PUCKO

Secretary

HERTA VAKENAIIS

Library Assistant

Directory of Graduate Students — 1951 and 1952

ABDELLA, JOSEPH P.	Worcester	ELLISON, ARTHUR	Newton Center
ADZIGIAN, EDWARD H.	Stoneham	ENO, ARTHUR L., JR.	Lowell
ALDRICH, RICHARD O.	Cambridge	ESTERKES, JAY M.	Lynn
AIELLO, NICHOLAS S.	Worcester	FAIRBANKS, WILLIAM W.	Natick
ALTONEN, CARL M.	Norwood	FARGO, PAUL G.	Boston
AMSLER, FRANCIS X.	W. Roxbury	FARRY, FRANCIS J.	Quincy
ARDEN, JOHN	Watertown	FEINSTEIN, MEYER	Boston
ARMENY, EUSTACE G.	Lexington	FELDMAN, MAX	Worcester
AUBURN, ALBERT	Wellesley	FINN, ARTHUR	Waltham
BABB, CHARLES F.	So. Boston	FIGORE, ANTHONY S.	Somerville
BARRETT, JOHN B.	W. Roxbury	FITZGERALD, PAUL R.	Lowell
BARTLETT, ARTHUR L.	Beverly Farms	FITZWILLIAM, FRANK J.	Milton
BERNSTEIN, LAWRENCE A.	Brookline	FORD, JOSEPH W.	Brookline
BERRY, BARBARA	Jamaica Plain	FURLONG, THOMAS J.	Winthrop
BERTOLUCCI, HAROLD F.	Medford	FURNARI, JOSEPH A.	W. Roxbury
BLACHER, LEO M.	Malden	GAFFNEY, JOHN T.	Roxbury
BORNSTEIN, COLEMAN L.	Dorchester	GASCON, ADELBERT J.	Auburndale
BRAMBERG, JOSEPH G.	Brookline	GLEASON, MARJORY H.	So. Boston
BRIDS, CHARLES W.	Quincy	GOLDMAN, MARTIN C.	Swampscott
BROWN, ARNOLD	Dorchester	GOODWIN, THOMAS G.	Jamaica Plain
BROWN, JOHN L.	Dorchester	GREER, ROBERT	Boston
BURKE, JOHN T.	Rockland	HAMMER, ERNEST T.	Lowell
BURROWS, OSCAR S.	Cambridge	HANSBERRY, MARTIN J.	Waltham
CADEGAN, ARTHUR C.	So. Boston	HAUFLER, ROBERT C.	Boston
CALLAHAN, DANIEL P., JR.	Worcester	HECKMAN, PHILIP E.	Waban
CAPRARO, CHARLES W.	So. Boston	HOGAN, WILLIAM H., JR.	Peabody
CARROLL, FRANCIS X.	Dorchester	HOLTZ, NORMAN	Haverhill
CHOPEK, ANNA	Mattapan	HOURLIHAN, DANIEL J.	Roxbury
COFFEY, ARTHUR G.	Dorchester	HULSE, MILES L.	Needham
COHEN, MAXWELL	So. Boston	HUNTER, MILDRED	Boston
COLE, DONALD A., JR.	Malden	HURLEY, JOHN J.	Worcester
COMEAU, ERNEST A.	Weston	IANNUCCILLO, ANTHONY C.	Ogunquit, Me.
CONNOLLY, THOMAS J.	Mattapan	JACKSON, HAROLD G.	Belmont
COWDREY, ELLIOTT T.	Lowell	JOHNSTON, JOHN R.	Watertown
CRISS, GEORGE M.	Roslindale	JONES, FRANK L., JR.	Revere
CRONIS, CHARLES	Lynn	KAITZ, ROBERT	Mattapan
CROWLEY, GEORGE W.	Salem	KAYE, RICHARD A.	Boston
CURRY, ROBERT A.	Quincy	KEENAN, PAUL H., JR.	Jamaica Plain
DALEY, JOHN J.	Bridgewater	KELLEHER, GERTRUDE M.	Salem
DERDERIAN, SETRAK K.	Beverly	KIROUAC, EDGAR O.	Fitchburg
DEMAKIS, CHARLES	Lynn	KLOZA, HENRY E.	Lowell
DIVER, ETHELEN H.	Lexington	KOUFMAN, JOSEPH M.	Brookline
DRISCOLL, TIMOTHY J.	Boston	KRAFT, SUMNER	Malden
DUDLEY, EVERETT H.	Fitchburg	LA MONICA, JOSEPH P.	E. Boston
DUFFEY, THOMAS E.	Brookline	LANE, JAMES G.	Medford
DUNN, LEO	Cambridge	LAW, GEORGE T.	New Bedford
EDESSES, MAX	Brookline		

LEE, EDWARD M.	Hyde Park	REARDON, JOHN F.	Cambridge
LENZI, GEORGE A.	Sudbury	RIORDAN, DANIEL W.	Marblehead
LEONE, FRANCIS	Newton	RITTENBERG, MURRAY H.	Brookline
LEVINE, MELVIN J.	Brookline	ROSENBERG, GEORGE	Allston
LINSCOTT, ANDREW R.	Swampscott	ROSS, MAX	Revere
LUISE, RALPH J.	Lynn	RUBOY, GEORGE M.	Boston
LYNCH, ROBERT J.	Arlington	RUDNER, BENJAMIN	Wollaston
MALONEY, JOHN J.	Jamaica Plain	RYAN, DANIEL J.	Dorchester
MALONEY, RICHARD G.	Quincy	SALLET, CHARLES	Providence, R.I.
MARASPIN, DAVIS G.	Barnstable	SANDLER, BENJAMIN	Lynn
MARSHALL, ARTHUR M.	Springfield	SAUNDERS, GENE A.	Boston
MCCARTHY, FREDERICK W.	Marblehead	SEAGLE, HAROLD	Worcester
MCCONVILLE, HENRY B.	Wakefield	SHACK, NORMAN M.	Lawrence
MCCULLOCH, RAYMOND C.	Hyde Park	SHEA, WILLIAM G.	Jamaica Plain
MCDUFFEE, EDWARD P.	Boston	SHEFF, IRVING	Roxbury
McFARLAND, FRED D.	So. Boston	SHOSTAK, SAMUEL	Dorchester
MCGIVNEY, WILLIAM A.	No. Attleboro	SHUE, WILLIAM A.	Brookline
MCGUIRE, JOSEPH E.	Worcester	SIEGEL, GERALD P.	Mattapan
MCLAREN, WILLIAM P.	Westwood	SMITH, DONALD F.	Lowell
MEARES, ROMULUS L.	Stoughton	STOREY, JOHN C.	Milton
MILLER, JOSEPH A.	Lowell	SULLIVAN, HELEN M.	Mattapan
MILLER, THOMAS M.	Dorchester	SULLIVAN, JULIA	Roxbury
MOSKOW, BENCION	Newton	SULLIVAN, RALPH W.	Wollaston
MULCAHY, CHARLES W., JR.	Brookline	SUTHERLAND, WILLIAM M.	Boston
MURPHY, MARIE L.	N. Easton	TOBIN, HAROLD M.	Salem
MURPHY, PATRICK F., JR.	Jamaica Plain	TODISCO, JOSEPH A.	Cambridge
MURPHY, THOMAS B.	Lawrence	TURCOTTE, PAUL A.	Lowell
NEAL, LEAH F.	Newton Center	VASIL, GEORGE S.	Saugus
OLIVER, LEON M.	Scituate	VINCENT, SANBORN	Winchester
PAPPAS, JOHN T.	Keene, N. H.	VOKE, EDWARD R.	Chelsea
PETERS, ADAM	Chicopee Falls	WALSH, E. CORBETT	Wellesley
POWERS, PAUL F. X.	Cambridge	WALSH, JOSEPH J.	W. Roxbury
RATZKOFF, PHILANDER S.	Brookline	WATERS, HELEN	Somerville
		WHITTIER, CECIL H.	Fairhaven
		WILLIAMS, RALPH C.	Cohasset
		WOOD, JOSEPH T.	Dorchester
		ZINS, LEONARD J.	Cambridge

FURTHER INFORMATION

For further information of any kind, relating either to the Graduate Division, or to the other Divisions of the School of Law, or to any special course, write to:

LOWELL S. NICHOLSON, DEAN

Northeastern University School of Law

47 MT. VERNON STREET

BOSTON 8, MASSACHUSETTS

TELEPHONE: COPLEY 7-6600 — Ext. 281

NORTHEASTERN UNIVERSITY
BOSTON — MASSACHUSETTS



ANNOUNCEMENT OF THE
GRADUATE DIVISION
OF THE
SCHOOL OF BUSINESS

1952-53

EVENING SESSIONS

OFFICE HOURS

JUNE 15 — AUGUST 15

Monday through Thursday.....8:45 A.M.—9:00 P.M.
Friday.....8:45 A.M.—5:00 P.M.

AUGUST 15 — JUNE 15

Monday through Friday.....8:45 A.M.—9:00 P.M.
SATURDAY.....8:45 A.M.—12:00 NOON

The office is closed on all legal holidays.

Interviews

Prospective students, or those desiring advice or guidance regarding any part of the school work or curricula, are encouraged to arrange for personal interviews with the Dean or other officers of instruction.

Gifts and Bequests

Northeastern University will welcome gifts and bequests for the following purposes:

- (a) For its building program.
- (b) For general endowment.
- (c) For specific purposes which may especially appeal to the donor.

It is suggested that, when possible, those contemplating gifts or bequests confer with the President of the University regarding the University's needs before legal papers are drawn.

Gifts and bequests should be made only in the University's legal name, which is "Northeastern University."

Address Communications to

NORTHEASTERN UNIVERSITY

GRADUATE DIVISION

SCHOOL OF BUSINESS

360 HUNTINGTON AVENUE, BOSTON 15, MASS.

TELEPHONE: COpley 7-6600

NORTHEASTERN UNIVERSITY
GRADUATE DIVISION
SCHOOL OF BUSINESS



CATALOG OF
EVENING GRADUATE COURSES

Leading to the Degree of Master of Business Administration

COURSES DESIGNED
FOR THE
PROFESSIONAL DEVELOPMENT OF EMPLOYED PERSONS
IN BUSINESS

Instructional Calendar

1952

First semester classes begin	September 15
Legal Holiday—No class sessions	October 13
Week for first term tests	October 20
Legal Holiday—No class sessions	November 11
Legal Holiday—No class sessions	November 27
Week for second term tests	December 1
Final class session before Christmas recess	December 19

1953

First class session after Christmas recess	January 5
Final Examinations, first semester	January 21-30
Second semester classes begin	February 2
Legal Holiday—No class sessions	February 23
Week of first term tests	March 9
Legal Holiday—No class sessions	April 20
Week of second term tests	April 13
Legal Holiday—No class sessions	May 30
Final Examinations, second semester	May 25-June 6
Summer Term begins	June 1
Summer Term ends	September 3

Those desiring to enroll for courses offered during the fall semester should file applications with the Director of Graduate Study not later than September 1. All applications for admission, inquiries regarding eligibility, and details of courses offered should be addressed to the

Director of Graduate Study

SCHOOL OF BUSINESS — NORTHEASTERN UNIVERSITY
360 Huntington Avenue, Boston, Massachusetts

COpley 7-6600 — Extension 261

Table of Contents

	<i>Page</i>
Administrative Organization	4-6
The Graduate School of Business —	
Objectives and Organization	7
Requirements for Admission	8-9
Requirements for the Degree	9
General Requirements for Graduation	10
Tuition and Fees	11-12
Veterans	12-13
Course Descriptions	14-23

Northeastern University

Administrative Organization

The Northeastern University Corporation

ROBERT GRAY DODGE, *Chairman*
FRANK LINCOLN RICHARDSON, *Vice-Chairman*
CARL STEPHENS ELL, *President of the University*
ROBERT GREENOUGH EMERSON, *Treasurer*
EVERETT AVERY CHURCHILL, *Secretary*

JOSEPH FLORENCE ABBOTT	EDWARD ATKINS LARNER
CHARLES FRANCIS ADAMS	JOHN ENDICOTT LAWRENCE
O. KELLEY ANDERSON	GALEN DAVID LIGHT
HENRY NATHANIEL ANDREWS	RALPH LOWELL
FREDERICK AYER	WILLARD BLACKINTON LUTHER
ARTHUR ATWOOD BALLANTINE	EDWARD ABBOTT MACMASTER
GEORGE LOUIS BARNES	HAROLD FRANCIS MASON
THOMAS PRINCE BEAL	JAMES FRANKLIN McELWIN
FARWELL GREGG BEMIS	HUGH DEAN McLELLAN
SAMUEL BRUCE BLACK	EDWARD R. MITTON
JOHN S. BOTTOMLY	IRWIN LIKELY MOORE
RICHARD L. BOWDITCH	IRA MOSHER
GEORGE R. BROWN	IRVING EDWIN MOULTROP
GEORGE AUGUSTUS BURNHAM	GEORGE S. MUMFORD, JR.
GODFREY LOWELL CABOT	EDWARD ABRAHAM NATHANSON
ELMER T. CARLSON	HARLAN P. NEWTON
WALTER CHANNING	JOHN THOMAS NOONAN
WILLIAM CONVERSE CHICK	GEORGE OLMSTED, JR.
ROBERT B. CHOATE	AUGUSTIN HAMILTON PARKER, JR.
PAUL FOSTER CLARK	THEODORE R. PEARY
GEORGE HENRY CLIFFORD	EDWARD DANA PHINNEY
ALBERT MORTON CREIGHTON	FREDERICK SANFORD PRATT
ROBERT CUTLER	ROGER PRESTON
MARSHALL BERTRAND DALTON	STUART CRAIG RAND
EDWARD DANA	WILLIAM McNEAR RAND
EDWARD DANE	NEAL RANTOUL
RALPH MEAD DARRIN	JAMES LORIN RICHARDS
CARL P. DENNETT	JAMES C. RICHDALE
FREDERICK JOSEPH DILLON	HAROLD BOURS RICHMOND
DAVID FRANK EDWARDS	CHARLES FOREST RITTENHOUSE
WILLIAM PARTRIDGE ELLISON	LEVERETT SALTONSTALL
WALLACE FALVEY	RUSSELL MARYLAND SANDERS
JOHN WELLS FARLEY	RALPH T. SAYLES
JOSEPH FABIAN FORD	ANDREW SEBASTIAN SEILER
NOBLE FOSS	GIFFORD KINGSBURY SIMONDS, JR.
ERNEST BIGELOW FREEMAN	JOSEPH P. SPANG, JR.
JOHN LIVINGSTONE GRANDIN, JR.	FRANK PALMER SPEARE
MERRILL GRISWOLD	F. R. CARNEGIE STEELE
H. FREDERICK HAGEMANN, JR.	CHARLES STETSON
GEORGE HANSEN	ABBOT STEVENS
CHRISTIAN ARCHIBALD HERTER	EARL PLACE STEVENSON
CHARLES EDWARD HODGES	ROBERT GREGG STONE
HAROLD DANIEL HODGKINSON	ROBERT T. P. STORER
HARVEY P. HOOD	FRANK HORACE STUART
CHANDLER HOVEY	RALPH EMERSON THOMPSON
HOWARD MUNSON HUBBARD	ELIOT WADSWORTH
MAYNARD HUTCHINSON	SAMUEL WAKEMAN
RAY E. JOHNS	EUSTIS WALCOTT
CHARLES BERKLEY JOHNSON	HAROLD JOHN WALTER
JACOB JOSEPH KAPLAN	EDWIN SIBLEY WEBSTER, JR.
MICHAEL T. KELLEHER	EDWARD AUGUSTUS WEEKS, JR.
HARRY HAMILTON KERR	SINCLAIR WEEKS

Northeastern University

General University Committees

Executive Council

CARL STEPHENS ELL, *Chairman*

EVERETT AVERY CHURCHILL
ALBERT ELLSWORTH EVERETT

MILTON JOHN SCHLAGENHAUF
WILLIAM CROMBIE WHITE

University Cabinet

CARL STEPHENS ELL, *Chairman*

WILLIAM THURLOW ALEXANDER
EVERETT AVERY CHURCHILL
ALBERT ELLSWORTH EVERETT
GEORGE RAYMOND FENNEL
ROGER STANTON HAMILTON
CHARLES WILLIAM HAVICE
FREDERICK ROBERT HENDERSON
WILFRED STANLEY LAKE
DONALD HERSHEY MACKENZIE

GEORGE ARTHUR MALLION
HAROLD WESLEY MELVIN
RUDOLPH MAGNUS MORRIS
LOWELL STARBUCK NICHOLSON
WINTHROP ELIOT NIGHTINGALE
RUDOLF OSCAR OBERG
EDWARD SNOW PARSONS
MILTON JOHN SCHLAGENHAUF
J. KENNETH STEVENSON

WILLIAM CROMBIE WHITE

Library Committee

EVERETT AVERY CHURCHILL, *Chairman*

WILLIAM THURLOW ALEXANDER
ALBERT ELLSWORTH EVERETT
ROGER STANTON HAMILTON

WILFRED STANLEY LAKE
HAROLD WESLEY MELVIN
MYRA WHITE

WILLIAM CROMBIE WHITE

School of Business

Administrative Organization

General Officers of Administration

CARL STEPHENS ELL, A.B., M.S., Ed.M., Sc.D., *President of the University*
FRANK PALMER SPEARE, M.H., LL.D., *President Emeritus of the University*
EVERETT AVERY CHURCHILL, A.B., Ed.D., *Vice-President of the University*
ALBERT ELLSWORTH EVERETT, S.B., M.B.A., *Dean of the School of Business*

Officers of the School of Business

ALBERT ELLSWORTH EVERETT, S.B., M.B.A., *Dean*
GEORGE ARTHUR MALLION, B.Ch.E., *Assistant Dean*
LINCOLN BATESON, B.B.A., *Registrar*
MILTON JOHN SCHLAGENHAUF, A.B., B.D., M.A., *Director of Public Relations*
NORMAN HENRY GREEN, A.B., *Placement Officer*
ROBERT E. LANG, B.S., *Director of Veterans' and Students' Accounts*
PAUL R. SPINNEY, *Director of Veterans' Services*
J. KENNETH STEVENSON, B.C.S., *Assistant to the Vice-President*
RUDOLF OSCAR OBERG, S.B., Ed.M., *Director of Alumni Relations*
DAISY MILNE EVERETT, *Bursar*

Administrative Committee

ALBERT ELLSWORTH EVERETT, *Chairman*
FRANK M. CUSHMAN GEORGE A. MALLION
HOWARD F. GREENE FRANKLIN NORVISH
WALTER J. HUNT STANLEY O. ROBINSON
A. HOWARD MYERS BERNARD H. SHELTON
HARRY OLINS BENJAMIN F. STACEY

Office Administration

LINCOLN BATESON, *Registrar*
KENNETH I. BALKAN, *Assistant to the Registrar*
LAWRENCE J. JONES, *Assistant to the Registrar*
JOHN J. MINNAHAN, *Assistant to the Registrar*
PAULINE M. HOVSEPIAN, *Secretary to the Dean*
HARRIET O. EIDE, *Secretary*
ALAYNE SAUTER, *Secretary*
JOYCE E. SPRAGUE, *Secretary*
NORMA JAMES, *Clerk Typist*
JANICE JEWETT, *Secretary*
VIVIAN W. PERRY, *Bookkeeper*

Northeastern University

The Graduate School of Business

THE OBJECTIVE of the Graduate School of Business is the education of men for the responsibilities of managerial or administrative positions. The faculty believes in the value of graduate study in business for employed students. Experience has shown that high standards of performance can be effectively maintained among them and the fact that the students are actively established with business enterprise provides an added interest and background for the appreciation and understanding of advanced courses of instruction in the applied areas of business operations.

The administration of a business enterprise in our modern complex economy requires an interrelationship of many specialized areas of operation. The function of the administrator is largely one of coordinating through effective policy the knowledge and skills of several specialists each trained in his respective field.

In contrast to narrow specialization in a specific area, the graduate program offered in the School of Business aims at scope or breadth of understanding. The core courses which are required of all students cut across the several major areas of operation, including advanced consideration of the varied problems in organization, production, distribution, finance, labor relations, etc., with which the executive must deal on the policy level. Through the elective courses and the thesis, the student is provided an opportunity to pursue his major interest as well as secure an understanding of the forces influencing our economy.

All of the evening graduate courses outlined in the catalog are open to men and women who already hold a bachelor's degree and who are qualified to profit from the instruction, whether they desire to enroll as candidates for the degree or plan to register as "special students" enrolled in one or more courses to acquire advanced instruction of specific value to them professionally.

The Graduate Program in the School of Business operates under the general policies established by the Faculty Committee on Graduate Study. This Committee is comprised of the heads of the instructional departments, the Dean of the School of Business, and the Director of the Graduate Study Program.

Graduate School of Business

General Administrative Policy

Requirements for Admission

All of the evening graduate courses outlined in the catalog are open to men and women who already hold a recognized bachelor's degree and who are qualified to profit from the instruction. Admission to the Graduate School of Business will be based upon conclusive evidence of the applicant's fitness for the work offered by the School and its potential professional value to him. In addition to previous scholastic record, selection also will consider current employment and achievement, the range and definiteness of professional interests, integrity and sense of responsibility, as well as indications of the applicant's ability to command the respect and confidence of his associates and employers.

Applicants for admission to the Graduate School of Business will be considered under two classifications.

1. *Candidates for the Master's Degree in Business Administration:* Graduates of colleges, universities, or technical schools, whose credentials indicate a satisfactory quality of undergraduate achievement and whose personal qualifications and records give evidence of ability to profit by the program of study, will be accepted for admission. The degree candidate must file with the Director of Graduate Study official transcripts of record of undergraduate work completed, and three letters of recommendation, one of which shall be from a responsible officer in the college in which he completed his undergraduate work, preferably the head of the department in which his degree was taken; one from his employer; and a third of his own choice.

The records of all applicants will be reviewed by the Board of Admissions and approval will be based upon the quality and general preparation evidenced. The Board may require additional preparation where the applicant's background, while of acceptable quality, may not appear to be adequate in certain respects.

Students who wish their graduate work to apply toward a degree of Master of Business Administration must register under this classification and each student's program of study must be approved before the applicant can be considered a degree candidate. Courses taken before the program is approved and filed are taken on the student's own responsibility.

2. *Special Students:* Two classes of special students will be admitted as follows:

(a) Students who could satisfy the admission requirements of a degree candidate as previously outlined, but who for personal reasons wish to enroll for special courses which would prove helpful to them professionally. Such students need only supply evidence of an undergraduate degree. Special students in either class (a) or (b) are subject to the same regulations covering attendance and quality of work, and must satisfy all course requirements for a grade. However, they will not receive degree credit. Should such students later desire to become degree candidates, their work completed would be

evaluated in terms of program requirements for the degree. It is understood that the School assumes no responsibility for accrediting such courses toward a degree.

(b) Mature persons who although not possessing a bachelor's degree have evidenced by superior achievement in their respective business pursuits that they could carry and profit by the work may be admitted for certain courses of study by permission of the Dean. The Committee on Admissions will outline special procedures whereby the applicant may present credentials to establish his qualifications. A special student in classification (b) will not receive credit toward an advanced degree until he has satisfied all of the requirements for admission as a regular candidate for the master's degree as outlined under (1) above.

Requirements for the Degree

It is recognized that the requirements of degree candidates will vary with their respective undergraduate preparation.

1. *Undergraduate Course Prerequisites:* The program for the M.B.A. degree is based upon an undergraduate background in business, commerce, and economics. It is understood that not all degree candidates will have completed the required undergraduate work in the specified areas. Consequently the following general areas of prerequisite undergraduate work have been established:

Accounting	Business Law	Marketing
Business Economics	Labor Relations	Production
Business Finance	Management	Statistics

The graduate program may be undertaken only upon specific understanding between the student and his faculty adviser as to the schedule of completion of the above undergraduate requirements. Under special conditions a candidate who has not taken one or more of the above prerequisites in undergraduate study may request exemption on the basis of unusual work experience in the fields. In such cases the student may petition for the privilege of demonstrating his knowledge through a proficiency examination.

2. Graduate Course Requirements:

(a) *Course Requirements:* The program of courses for each degree candidate is arranged through consultation with his faculty adviser. In general, and over and above any undergraduate course prerequisite mentioned in (1) above, it will comprise thirty (30) semester hours of credit earned in courses approved for graduate credit, plus a thesis equivalent to five (5) semester hours credit completed in G 298-299, Thesis Seminar. The thirty (30) semester hours of credit will comprise a core of required graduate courses prescribed by the faculty adviser, plus electives to complete the credit requirements.

To allow adequate time for outside preparation, the student is permitted to enroll in any term for but two (2) evenings of instruction per week, with the exception that G 298-299, Thesis Seminar, may be taken concurrently with other courses of either classification upon approval of the candidate's faculty adviser.

(b) *Thesis Requirements:* Each degree candidate must submit a written report embodying the results of an independent study on some important subject in the field of his major interest. This report will be prepared in a seminar course for which the student will register upon approval of his faculty adviser. All theses must be completed and submitted to the seminar instructor prior to May 1 of the academic year.

(c) *Comprehensive Examination:* A comprehensive oral examination shall be required of each student as part of the academic accomplishment toward the M.B.A. degree. The examination will be in the field of the student's thesis and will be given only after the thesis is submitted to the Director of the Graduate Program. A committee of no less than three and no more than five of the faculty will participate in the examination.

General Requirements for Graduation

1. *Scholastic Achievement:* The cumulative academic average of all courses in the 200-299 classification taken by a student for degree credit must be B or better with no grade below C. Graduate credit for courses in the 100-199 classification will be allowed only upon prior approval of the faculty adviser. Credit for such courses will require additional work assigned by the instructors and the students must achieve course grades of B or better. However, courses taken in this 100-199 group to satisfy undergraduate background may be passed with a minimum grade of C.

Any candidate for a Master's degree who accumulates two "Incomplete" grades and fails to make arrangements before the end of the following semester to clear these deficiencies not later than the following academic year shall be removed from his status as a degree candidate.

2. *Course Load:* Any student registered in the Graduate School of Business for graduate courses (either classification 100-199 or 200-299 courses) will be limited to registration in two courses per week.

3. *Residence Requirement:* Degree candidates must complete in the Graduate School of Business a minimum of 20 semester hours of credit next preceding graduation.

4. *Time Limit:* It is expected that study will be continuous on either a partial or full program until completion of the degree requirements. Students who for practical reasons encounter problems necessitating temporary discontinuance must arrange with the Director for a special privilege arrangement.

Examinations

Final examinations, which are required for all students, are scheduled for the end of each term. Credit is not allowed for any course until the examination has been passed successfully.

In the case where a student is unable to take the examinations as originally scheduled because of illness or business obligations beyond his control, he may petition for the privilege of taking his examination during the next regularly scheduled make-up examination period. The grade received will be recorded as the "original." The charge for each make-up examination is \$5.00.

Graduate School of Business

Tuition and Fees

The policies governing the amount and the regulations pertaining to the payment of fees are established by the Executive Council of the University. The Council reserves the right to change these regulations at any time. Such changes will apply to students currently enrolled as well as new applicants for admission.

Checks should be drawn payable to: "Northeastern University."

Students are not permitted to attend class sessions or take any examinations or tests until they have paid their tuition fees or have made satisfactory arrangements for payments.

Students will not be advanced in class standing, or permitted to re-enroll in the University, nor will degrees be conferred until all financial obligations to the University have been met.

No certificate of honorable dismissal will be issued to any student who has not fully met his financial obligations to the University.

Matriculation Fee: The University matriculation fee of \$5.00 must accompany the initial application for admission to the Graduate School of Business. This fee is non-refundable. Applicants who are graduates of one of the schools of Northeastern University are not subject to this fee.

Late Registration Fee: Students are required to register before the beginning of each term within periods specified by the Director of the Graduate Program. A student who fails to complete registration within the designated period may register at a later date with the approval of the Director and upon payment of a late registration fee of \$5.00.

Tuition: The charge for tuition is at the rate of \$16 per semester hour, or \$40 per half year course. Tuition statements will be mailed to the students by the Student Accounts Office and are payable on or before the date specified.

Late Payment Fee: A late payment fee of \$2.00 is charged a student who fails to pay his tuition fee or other charges on or before the date specified by the University.

Make-up Examination Fee: Each make-up examination must be specially prepared and administered. To defray this expense the charges for the make-up privilege are as follows:

Tests (other than final examination).....	\$3.00
Final Examinations.....	5.00

Comprehensive Examination Fee: A fee of \$10 is charged a student for the comprehensive examination in the field of his thesis.

Graduation Fee: The University graduation fee of \$15 is charged to those who are candidates for the Master of Business Administration degree, and is payable on or before May 1st of the year in which the student expects to graduate.

Refund of Tuition

Requests for refunds must be made at the time of filing the Application for Withdrawal at the School Office. If the withdrawal notification is sent in by mail, the refund should be requested in the letter with reasons which necessitate the withdrawal. *No refunds will be granted a student who voluntarily withdraws* or who has attended more than five weeks of the term for which payment has been made.

Refunds of tuition will be considered only in the following instances:

1. If, because of illness, a student is compelled to withdraw before the fifth week of the term, or
2. If a student who is regularly employed is sent out of town permanently by his employer, or
3. If the hours of employment of a student who is regularly employed are changed so as to make it impossible for him to continue in attendance, or
4. If a student is inducted into military service.

The Committee on Withdrawals will consider requests for tuition refunds only on the following bases:

1. That the application for withdrawal be made immediately after the student ceases attendance.
2. The request for refund is accompanied by an *acceptable* physician's certificate in the instance of illness, or by an *acceptable* employer's certification in the instance of a change in place or hours of employment.
3. Evidence of induction into military service.

For cases complying with the above, partial refunds on tuition for the semester may be allowed according to the following schedule:

Petition for Withdrawal Filed Within	Refund to Student on	
	Regular Term	Summer Term
One Week	80 per cent	80 per cent
Two Weeks	80 per cent	60 per cent
Three Weeks	60 per cent	40 per cent
Four Weeks	40 per cent	20 per cent
Five Weeks	20 per cent	0 per cent
After Five Weeks	0 per cent	0 per cent

The above does not include fixed or non-refundable fees for which there is no refund allowed.

The official "Application for Withdrawal" form may be obtained in the School Office. All refunds are made through the Student Accounts Office of the University. The refund procedure in such cases takes from three to four weeks. A check is mailed directly to the student for any refund which may be granted.

Veterans

A veteran who wishes to attend under the educational benefits of Public Law 346 (G. I. Bill of Rights) must report to the Veterans Office at Northeastern University at the time of registering to present his Certificate of Eligibility and Entitlement, or otherwise clear his status, and process the necessary forms. The acceptance of any applicant under the G. I. Bill is sub-

ject to a statement from the Northeastern University Veterans Office certifying to his eligibility.

Veterans who will have received their Bachelor's degrees on or after July 25, 1951, may be permitted to continue education or training in graduate study under P. L. 346 beyond July 25, 1951, provided such training is initiated at the earliest possible date after successful completion of undergraduate study and provided the application for graduate study is perfected and received in the Veterans Administration Headquarters prior to completion of undergraduate study.

Graduate School of Business

Course Descriptions

THE UNIVERSITY reserves the right to withdraw, modify or add to the courses offered, or to change the order of courses in curricula as may seem advisable.

The University further reserves the right to withdraw in any year any elective or special course for which less than twelve enrollments have been received. Regular students so affected by such withdrawal will be permitted to choose some other course. In the case of special students, a full refund of all tuition and other fees will be made.

The University also reserves the right to change the requirements for graduation, tuition and fees charged, and other regulations. However, no change in tuition and fees at any time shall become effective until the school year following that in which it is announced.

All full-year courses are numbered with a double consecutive number and all half-year courses with a single number. The letter or letters immediately preceding the numbers indicate the classification of the course. The number of class sessions indicated for each course includes the final examination session. All full-year courses will have mid-year examinations and course credit will be granted on a semester basis.

Courses offered for graduate credit are designated in the following descriptions under two classifications:

- 200-299 Courses open only to students registered in the Graduate School. A minimum of 20 semester hours of credit in this classification is required of all degree candidates.
- 100-199 Courses open to undergraduate and graduate students. Graduate students may register for credit in such courses only upon approval of the faculty adviser, and to a maximum limit of 10 semester hours of credit.

G 200 COMPARATIVE ECONOMIC SYSTEMS

This course attempts to bring into focus the various schools of economic thought as they might relate to our current economy. It presents an examination of the evolution of economic thinking in terms of the "climate" or environment out of which each developed, placing major emphasis on our modern economic concepts directly affecting the production and distribution of economic goods; the increasing important relationship of governmental policy to industrial activity; etc.

2½ semester hours credit

G 202 CASE STUDIES IN BUSINESS ENTERPRISE

A survey of the history of industrial endeavor and business activity from its rudimentary stages to the present day, with careful attention to the

evolution of business management, noting successful and unsuccessful examples by case history; discussion of the role that business plays in shaping our economy and society as well as the effect of our social and economic order upon the business firm; special emphasis is given to the control of business by the state, monetary policies, public finance, the rise of banks, corporations, commodity and stock exchanges, and their regulation and control; the rise, causes, and effects of financial and commercial crises and depressions; a close tie-in of the economic thinking that prevailed behind the visible aspects of economic and industrial activity.

2½ semester hours credit

G 204 GOVERNMENT AND BUSINESS

The expanding scope of the government's economic and social activities is bringing about a much closer relationship between government and business. The course analyzes the role of government as a regulating force as well as the nature and impact of governmental fiscal, economic, and social policies upon the conduct of business. The political and economic philosophies behind greater government participation in the economic structure of the nation, as indicated by public utility, anti-trust, and labor and social legislation; the responsibilities accruing to government as the result of its participation in the regulation and shaping of our economic endeavor, i.e., high level production, stabilized employment and worker's income, housing, foreign policy, and industrial mobilization. Case studies and analyses of the legislative framework within which government participation in the economic structure is set make up the background of the course.

2½ semester hours credit

G 206 MANAGERIAL CONTROL — ORGANIZATION

This course is concerned, at the top management level, with the legal and practical problems involved in the selection, establishment and operation of business organizations, including partnerships, corporations and business trusts. Among the topics considered are formation; charter powers and by-law provisions as the source of legal authority; records; duties; rights, responsibilities and liabilities of officers, directors, stockholders, partners and trustees; protection of minority interests; rights and remedies of creditors; consolidation, merger and dissolution; patents, trademarks and copyright. All of the foregoing are treated from the point of view of the advantages and disadvantages of each type of business organization.

2½ semester hours credit

G 209-210 MANAGERIAL CONTROL — FINANCE

A study of the methods of selection and development of the optimum financial structure for the business firm, including financial activation of the organization and efficient maintenance of its operation; sources of initial as well as of operating capital; costs of capital; dividend policy and dividend payment procedure; organization for finance, including capital budgeting, tax planning, long-range fiscal planning; financing for reorganization, merger, and liquidation; international aspects of financial control; analysis of financial statements and the significance of operating ratios.

5 semester hours credit

G 211-212 MANAGERIAL CONTROL — PRODUCTION

Top management consideration of the responsibilities and function in organizing for, planning, and controlling the procedures of production. The course considers the modern tendencies of industrial development, specifically integration, concentration, consolidation, specialization, standardization, and diversification. It includes a study of the consumptive demand to determine markets and what to manufacture; factors affecting the industrial site, such as accessibility to raw materials, adequate labor supply, transportation service and costs; plan and design, construction and layout for effective production flow; selection of equipment; the coordination of output with demand; seasonal production; production planning; inventory control; quality control; procurement; cost control; methods of compensation of labor.

5 semester hours credit

G 213-214 MANAGERIAL CONTROL — DISTRIBUTION

The subject matter in this course is considered from the policy-level problems of present-day distribution of merchandise. It combines the managerial control of the functions of market research, sales promotion, and sales management, and the coordination of these functions with production management and financial management. It includes problems of establishing sales objectives and sales policies, developing the sales organization; product analysis and planning; product packaging for marketing and shipping purposes; the relation of production to effective demand; the break-even point; sales forecasting and budgeting; pricing policies; marketing channels; selling methods; selling costs; policy of salesmen's compensation; sales quotas; sales-expense relationships; market studies, both domestic and foreign; problems and policies relative to government regulations or controls on distribution.

(Prerequisite, D 111)

5 semester hours credit

G 215 MANAGERIAL CONTROL — INDUSTRIAL RELATIONS

A study of managerial practice and policy relative to the recognition and solution of problems pertaining to employer-employee relations in industry; effective handling of controversial questions between management and the union, including contract negotiation, grievance procedure, and arbitration; communication between management, the union, and the rank and file; wage policies including job evaluation, incentives, income security benefit plans, and labor costs; labor productivity; the problems of government controls in industrial relations; and the responsibilities to society of management and labor in today's economy.

2½ semester hours credit

G 216 MANAGERIAL CONTROL — ACCOUNTING

This course is designed to integrate the accounting function into the broad aspects of management plans and policies. The growth of our leading companies in size and complexity of organization and operation, the increased intervention of government in business for purposes of taxation and the regulation of many activities in the public interest, the public financing of business enterprises through wide distribution of their securities, and the growing role of organized labor as a powerful factor to be reckoned with in business planning and operation, all have created problems which can only

be solved by broadly trained executive personnel. The keystone to this broad training is a thorough understanding of the use of accounting principles and processes in present control and future planning.

The accounting aspects of management treat with the control of business through accounting media such as the budgeting of manufacturing, marketing, and administrative costs, the design of systems efficient for large business, and forward planning to minimize taxes. Also discussed are the preparation and use of reports especially designed for credit purposes, for presentation to management, stockholders, bondholders, and organized labor.

2½ semester hours credit

G 230 MANAGERIAL CONTROL — QUALITY

A major consideration for effecting a successful quality control program lies in its administration. This course is pointed at bringing an appreciation of the non-technical aspects of administering a quality control program. In developing these concepts, intensive discussion is given to economics of quality; relation of design and inspection to control of quality; organizing for quality control; quality control engineering; integration of quality functions; methods of obtaining quality assurance; and case studies.

(Prerequisite, IM 13)

2½ semester hours credit

G 298-299 THESIS SEMINAR

This course affords opportunity for the student to pursue advanced study and investigation in the field of his major interest. It will combine the objectives and procedures of a seminar course with those of the thesis. In this way the thesis represents the product of exhaustive investigation of a substantial business or industrial problem related to the seminar field. Each student is assigned to a seminar thesis section depending upon his choice of specialization, and the instructor becomes his thesis adviser. The course continues through both semesters with regular periodic meetings arranged at the mutual convenience of instructor and students. A degree candidate will register for this course not later than September of the academic year in which he desires to complete his degree requirements.

5 semester hours credit

Ec 112-113 BUSINESS FINANCE

A graduate level study of the basic financial principles and problems involved in the management of a business, including financial instruments, institutions, capital structure, refinancing, working capital, management, credit, reorganization and control. The course is specifically designed for MBA students whose undergraduate program included no courses in banking or finance.

5 semester hours credit

A 109-110 C.P.A. PROBLEMS

A complete review of the theories encountered in A 5, 6, 7, 8, 21, 22, 41, 42. This course is primarily for students intending to take the state C.P.A. examinations. Considerable practice is required, using largely problems from previous C.P.A. examinations. Emphasis is placed on the technique of adequate problem solutions.

(Prerequisites, A 7-8; 21-22; 25; 41-42; L 13, 14, 15) *10 semester hours credit*

A 111 FUND ACCOUNTING

The concept of "fund" accounting finds its application in the accounting procedures of governmental units, charities, and educational institutions. This course deals with segregation of assets and liabilities into funds and self-balancing groups required by the organization of non-profit enterprises.

Integrated into the principles of funds is the treatment of accounting controls necessitated by governmental approaches or budgets.

(Prerequisite, A 6)

2½ semester hours credit

A 113-114 MANAGERIAL ACCOUNTING

A graduate level study of accounting in terms of its relations to management. The course presents the systematic aspects of the accounting method of collecting and reporting business information, and the problems associated with its collection, presentation, and analysis as a tool or aid to management. The emphasis, throughout the course, is on interpretation and meaning.

In general, the areas of study covered in the first half are double-entry procedure, the relation of accounting reports to the operations of the business, the analysis of business transactions, the classification and accumulation of accounting data and accounting reports, and their analysis. The second half deals with problems of depreciation, manufacturing costs, the elements of cost planning and control, and budgetary procedure. The course is specifically designed for graduate students whose undergraduate program included no courses in accounting.

5 semester hours credit

A 137 BUDGET PROCEDURES

Budgetary control has received definite acceptance by businessmen as a highly useful and practical aid essential to sound business management. The course considers the requisites to successful budgeting and the essential steps in budgetary control, with the procedures for carrying out budget policies. Various budgets are discussed and illustrated; sales, production, purchases, manufacturing expenses, administrative expenses, and financial; the preparation of estimated financial statements; comparison of the budget with performance at the end of the budget period, and analysis of the variances between actual and budget figures to determine causes.

(Prerequisite, A 7-8)

2½ semester hours credit

A 134 CONTROLLERSHIP — THEORY AND PRACTICE

The three basic objectives of the controllership function are defined as control and protection of corporate property, compliance with legal reporting and record-keeping requirements, and assistance to management in controlling operations and formulating policies. Work of the controller is an advanced course in controllership, covering the functions and organization of the controller's department, basic techniques employed by the controller, the interpretation of historical results and their coordination into the broad policy-making program of the business. The technical phases of the controller's work are covered as preparation for the study of the controller's role as reporter, adviser, and counsellor to business management at all executive levels undertaken in the latter part of the course.

(Prerequisite, A 137)

2½ semester hours credit

A 145-146 TAX PLANNING

An advanced course in corporate tax problems covering tax advantages and disadvantages of the corporate form of organization; dangers of inadequate capitalization; compensation problems, including deferred compensation, bonus plans, and pension plans; problems of close corporations; the section 102 penalty; corporate reorganization and liquidation; expense accounts of executives; research and development expenses; and cancellation of indebtedness. A detailed analysis of real estate tax problems, including tax aspects of mortgages, lease agreements containing options to buy, sales and lease pacts; also purchase and sale of a business, including covenants not to compete; survivorship purchase agreements; pointers on bad debts, worthlessness, and other business losses. Methods of effecting tax economies in connection with these problems will be stressed. *5 semester hours credit*

D 107 MARKET RESEARCH

This course deals with the techniques of research investigations in the collection and utilization of data relating to the problems of marketing, and securing profitable application of the results of market research in business; the facilities available for carrying out research activities; the development of the market research department; evaluating the practicability of undertaking specific market research studies; planning mail and field investigations; preparation of materials; testing results; interpretation of findings; preparation of reports leading to the development of new products, sales methods, and sales areas. *2½ semester hours credit*

Ec 115-116 APPLIED SECURITY ANALYSIS

This course is designed to acquaint the student with methods used by practicing security analysts in their studies of various industries and to provide practical information useful in future analysis of companies operating in these industries. It includes review of basic principles of Security Analysis; tools used by practicing analysts; analytical study of various industries comprising our economy, including the major consumer goods, capital goods, service industries, public utilities, and railroads. Practicing analysts who are specialists in their respective industries will comprise the faculty. These instructors will develop the problems affecting their industries, the methods used in appraising their outlook, and the approaches to the problems of analyzing the securities of individual companies within these industries.

(Prerequisite, Ec 6)

5 semester hours credit

Ec 122 INTERNATIONAL ECONOMICS

This course attempts to analyze foreign trade and finance in terms of current practices and theories. It discusses national welfare and foreign trade; international accounting and what the balance reveals; the making of international payments and documents used; the rate of exchange; international equilibrium; foreign trade and the national income; principles behind protection; trade control through the tariff, import quotas, exchange controls and their evaluation; international commodity agreements and commercial treaties; monetary policy problems; the international gold standard; exchange reserve standards; exchange stabilization funds; the shortage of dollars; the International Monetary Fund; international investments.

2½ semester hours credit

Ec 117 PUBLIC FINANCE

An examination of the techniques of raising, administering and spending funds by governmental bodies, on federal, state and local levels, including the objectives of government expenditures, the theories behind them, their economic effects, and various methods for their control; the administration of government expenditures as embodied in fiscal policies of government; the nature of public debt, its history, and management; methods of raising public funds, economic, legal, and ethical aspects of taxation and exemption from taxation; specific taxes as sources of government revenue; the federal-state-local fiscal interrelationships.

2½ semester hours credit

Ec 109-110 BUSINESS PLANNING AND RESEARCH

To examine the nature, organization, and operation of our present economic society as a producing mechanism; the flow of income arising out of this production, which determines the capacity of the people to purchase the goods and services produced annually, and to provide the savings essential to the formation of new capital. To develop and present an objective and comprehensive analysis of the information and statistics regarding our economic system which influence general business conditions and which furnish useful aids toward more definite and more accurate business decisions. To demonstrate the practical usability of these data in actual business situations involving the management of production, marketing, and finance.

5 semester hours credit

IR 109 WAGE ADMINISTRATION

The course is a comprehensive study of the underlying theory of industrial wages. Specific consideration is given to job and salary analysis and evaluation; merit rating; incentive wages; wage payment plans. The importance of a sound wage structure to healthy employer-employee relations and the administration of wages through collective bargaining from the production as well as the labor relations point of view.

2½ semester hours credit

IR 111-112 PERSONNEL ADMINISTRATION — HUMAN RELATIONS

Effective handling of human problems has become a factor of vital importance to management. This course in human relations in business is the foundation to all personnel policy and offers an approach or understanding of value not only to those in personnel work but also to all persons having supervisory relationships. Subjects included for discussion are the techniques of approach to situation analysis; problems in selection; training; employee rating; change of employee status; supervision; wage policies; complaints and grievances; employee morale; labor turnover; discipline; health; safety; employee participation; collective bargaining; public relations.

5 semester hours credit

IR 123 LABOR LEGISLATION — UNION-MANAGEMENT RELATIONS

Government and Labor-Management Relations and the development of labor legislation. The purpose, policy and jurisdiction of the National Labor Relations Act, as amended by the Taft-Hartley Act. A detailed study of the Labor-Management Relations Act, 1947 (Taft-Hartley Act). The Fair Labor Standards Act of 1938 (Wage and Hour Law) as amended by the Portal-to-Portal Act of 1947. Consideration of the procedures, powers and limitations of the agencies administering the statutes.

2½ semester hours credit

IR 125 THE LABOR AGREEMENT — NEGOTIATION AND ADMINISTRATION

The negotiation, re-negotiation, and administration of labor contracts; study of the component clauses such as union recognition and security, management prerogatives, seniority, vacations, wages, hours, working conditions; grievance analysis and arbitration procedure developed through case studies in actual labor-management relations as affected by such clauses, and the entire collective bargaining agreement and relationship.

2½ semester hours credit

IR 127 LABOR RELATIONS SEMINAR

Round-table discussion of current labor-management problems such as union responsibilities, management responsibilities, the annual wage, profit-sharing pensions, criteria for wage determination, contractual welfare programs, social legislation, etc. Cases will be considered raising specific issues for discussion.

2½ semester hours credit

IM 114 ADVANCED QUALITY CONTROL

This course is designed primarily for those who require a more detailed understanding of the application of quality control techniques. The material covered in Quality Control is enlarged on and a number of the more recently developed techniques are treated in detail. Application of the methods to several particular industries, such as metal-working, textile, aircraft, chemical process, electron tube, screw machine products, is studied.

Subjects covered are special purpose control charts; multi-vari charts; rational sub-grouping principles; pictograms; PD-diagrams; principles of visual inspectors; establishing quality assurance; check inspection methods; special trouble-shooting techniques; organizing a quality control program and introducing it into the factory. Each student conducts a term project involving application of the methods in his own field.

(Prerequisite, IM 13 or equivalent)

2½ semester hours credit

IM 119-120 PLANT LAYOUT

This course is taught on a combination lecture and laboratory method using the latest techniques and equipment employed in industrial practice. Instruction proceeds principally by the project method where a plant site is chosen for the manufacture of a specific product. The product is analyzed to determine the processes involved, the number and types of machines and auxiliary equipment necessary for manufacture. Flow charts are prepared and machine and equipment location determined using A.S.M.E. approved two-dimensional templates and three-dimensional scale models.

In addition to the physical arrangement of machines and equipment, consideration is given to the layout of utilities such as power, light, water, sprinklers, drainage, telephones, heating equipment, lavatories, etc. Alternate layouts are considered and all cost factors including estimates of construction changes are evaluated to determine most economical layout. Detailed attention is given to the layout of office areas and departments servicing production as well as areas designed for employee safety and convenience. Design is checked for conformance to local and state regulations pertaining to building codes, zoning, safety, and fire protection. Finished layout drawings are prepared for presentation to management.

(Prerequisites, IM 1, IM 12, IM 15-16)

5 semester hours credit

IM 122 INDUSTRIAL EXPERIMENTATION

The two main problems confronting experimenters in the laboratory, pilot plants, and at factory levels are the evaluation of data and the design of experiments. They are essential tools of the engineer and factory trouble-shooter. Consequently, this course dealing with tests of significance, analysis of variance, correlation techniques, and experimental design is specifically directed at producing greater efficiency and competency for quality control personnel as well as experimenters of all classes.

The section on testing the significance of averages, variances, percentages is concerned with the "u", "t", "F", "L", "J", and Chi-Square statistical tests. The course continues with process trouble-shooting methods of graphical analysis and experiment design; specific experiment designs and analysis of variance for single, double, multiple factor tests; Latin Square and Graeco-Latin Square, Incomplete Latin Square and Youdon Square design; importance of balancing and randomizing; pictograms for summarizing results of experiments. The correlation techniques to be considered are the simple linear, tetrachoric, rank and multiple correlations.

The person completing the course will be equipped not only to select an efficient design for his experimental work, but will also be enabled to make an objective evaluation of the data to determine whether the variations in the data are significantly different from those which might be expected purely on a chance basis. It is important to note that the ability to make this kind of distinction helps avoid experimental blind alleys, with the associated vital savings in dollars and days.

2½ semester hours credit

L 113 BUSINESS LAW I

A graduate level study of contracts, including the nature, kinds and formation of contracts; breach, remedies and damages. Agency: nature, purpose and formation of agency relationship; rights and duties of principal and agent, scope of agent's authority; rights and duties of principal and third persons; termination of agency. Employer and employee: compensation laws; duties of master; contributory negligence doctrine; injuries to third persons. This course is specifically designed for MBA students whose undergraduate program included no courses in business law.

2½ semester hours credit

L 114 BUSINESS LAW II

A graduate level study of negotiable instruments; bills, notes and checks; requirements of a negotiable instrument; negotiation; liabilities and defense of parties; procedure upon dishonor; discharge. Bailments: nature and kinds; rights and duties of parties; carriers; documents of title. Sales: nature of sales contracts; warranties; transfer of title; rights and remedies of seller and buyer. Insurance: formation and function of insurance contract; kinds of policies; legal phases of life, property and other insurance. Suretyship: rights of the surety and the guarantor; rights and duties of the creditor; defenses of the surety and guarantor. This course is specifically designed for MBA students whose undergraduate program included no courses in law.

2½ semester hours credit

L 115 BUSINESS LAW III

A graduate level study of partnerships: nature, kinds and formation; rights and duties of partners; partner's authority to bind firm; relation of partners and third persons; dissolution and winding up. Corporations: nature and creation; charter; powers, rights and liabilities; nature and kinds of capital stock; rights and liabilities of stockholders; directors and officers. Mortgages: rights and duties of mortgagor; rights and duties of mortgagee; rights after default. Property: landlord and tenant relationship; classification of tenancies; rights and duties of landlord; rights and liabilities of tenant. Bankruptcy: Federal Bankruptcy Act; acts of bankruptcy; adjudication; rights and duties of bankrupt; unsecured, secured and priority claims; extensions, compositions, and other debtor-relief provisions; discharge. This course is specifically designed for MBA students whose undergraduate program included no courses in business law.

2½ semester hours credit

T 105-106 I.C.C. PRACTICES AND PROCEDURES

A course designed to acquaint management levels in the transportation industry and in the industrial traffic departments of general industry with the responsibilities applicable to the regulation of transportation by the Federal Government; who must execute these responsibilities; the procedure by which they are carried out; history and content of Interstate Commerce Act and its impact upon all industrial activity; purpose and function of the Interstate Commerce Commission; training and preparation for the Interstate Commerce Commission Practitioners' Examination, including a study of important cases under the Commerce Clause of the Constitution; administrative law and procedure; ethics and general rules of practice.

(Prerequisite, T 1, T 3)

5 semester hours credit

T 117 ADVANCED TRANSPORTATION ECONOMICS

This course looks beyond the mechanics of traffic management toward the more complete professionalization of the transportation executive, including the part played by transportation in the production process and the marketing process; transportation and the division of labor; the effect of transportation rates on prices and on the location of industry; carrier rate structure; the philosophy of public utility regulation; lawfulness and unlawfulness of carrier rates.

2½ semester hours credit



Application
Received by _____

Date _____

Northeastern University

SCHOOL OF BUSINESS

360 HUNTINGTON AVENUE, BOSTON 15, MASS.

A fee of five dollars must accompany this application. Make checks, money orders, or drafts payable to Northeastern University. **This fee is not refundable.** This fee is included under the educational benefits of the G. I. Bill of Rights.

APPLICATION FOR ADMISSION TO GRADUATE STUDY

Date.....

Mr. _____
Mrs. _____
I, Miss. _____
First Middle Last Name

submit the following information for review by the Committee on Admissions.
If my qualifications are satisfactory I wish to attend as:

- ☐ A Candidate for the degree of Master of Business Administration.
☐ A Special Student registering for the following courses:

Home Address.....
Street City State Tel.....

Date of Birth..... Do you plan to attend under the G. I. Bill? Yes ☐ No ☐

Supply full information regarding previous collegiate education.

	COLLEGE OR UNIVERSITY	LOCATION	DATES ATTENDED	DEGREE	DATE OF GRADUATION	HONORS
Undergraduate						
Graduate						

Study									
Graduate Study									

I request advanced standing credit for graduate study completed at.....
for which I shall furnish a transcript.

As one of the requirements for admission, I shall procure letters of recommendation as to my qualifications for graduate study from the following persons:

(1) Educational Reference: Name.....Title.....
Officer of college, preferably head of department in which you received bachelor's degree.

(2) Employment Reference: Name.....Title.....
Officer of company by which you are presently employed.

.....Company.....Address.....Tel. No.

(3) Personal Reference:.....Name.....Address.....

Résumé of employment during the past ten years (including military service):

NAME AND ADDRESS OF EMPLOYER	TITLE OF POSITION	NATURE OF WORK	DATES FROM	TO

.....
Signature of Applicant

Upon receipt of all the necessary credentials, your application will be reviewed by the Committee on Admissions and you will be notified of its action.

FOR OFFICE USE ONLY

NAME.....

Approved for Admission as ☐ Degree Candidate

☐ Special Student

Date..... For the Committee:.....

Application checked.....

Interview.....

Transcript evaluated.....

Reference letters received.....

1. Employer.....

2. Educational.....

3. Personal.....

Cleared by V. A.....

Program planned.....

Graduate adviser assigned

[illegible]

Courses required in School of Business to satisfy undergraduate prerequisites:

1. Accounting for Management

1. Accounting for Management
 2. Business Economics
 3. Financial Organization
 4. Statistics
 5. Business Law I, II, III
-
6. Labor-Management Relations
 7. Marketing
 8. Production
 9. Management Problems and Policies
 - 10.
 - 11.
 - 12.

NORTHEASTERN UNIVERSITY

COEDUCATIONAL

COLLEGE OF LIBERAL ARTS

Offers a broad program of college subjects serving as a foundation for the understanding of modern culture, social relations, and technical achievement. Varied opportunities available for vocational specialization. Degree: Bachelor of Science or Bachelor of Arts.

COLLEGE OF ENGINEERING

Offers curricula in Civil, Mechanical (with Industrial and Aeronautical options), Electrical, and Chemical Engineering. Classroom study is supplemented by experiment and research in well-equipped laboratories. Degree: Bachelor of Science in the professional field of specialization.

COLLEGE OF BUSINESS ADMINISTRATION

Offers curricula in Accounting, Industrial Relations, Marketing and Advertising, Finance and Insurance, and Business Management. Each curriculum represents in itself a broad survey of business technique, differing from the others chiefly in emphasis. Degree: Bachelor of Science in Business Administration.

SCHOOL OF LAW

Offers day and evening undergraduate programs admitting those who present a minimum of one-half of the work accepted for a bachelor's degree in an approved college or its full equivalent, each program leading to the degree of Bachelor of Laws, and a graduate program leading to the degree of Master of Laws.

SCHOOL OF BUSINESS

Offers curricula through evening classes leading to the degree of Bachelor of Business Administration with appropriate specification in Accounting, Management, and Engineering and Business. Certificate programs in the Labor Relations Institute, the Institute of Retailing, Institute of Insurance, Institute of Traffic Management and the Office Management Institute. Preparation for C.P.A. examinations. Intensive programs arranged to meet special needs.

EVENING COURSES OF THE COLLEGE OF LIBERAL ARTS

Certain courses of the College of Liberal Arts are offered during evening hours in the fields of Biology, Chemistry, Economics, English, History, Government, Psychology and Sociology. A special program preparing for admission to the School of Law is also available. The program is equivalent in hours to one-half the requirement for the A.B. or S.B. degree. Special courses also available. Degree of Associate in Arts conferred.

The Colleges of Liberal Arts, Engineering, and Business Administration offer day programs and are conducted on the Co-operative Plan. After the Freshman year students may alternate their periods of study with periods of work in the employ of business or industrial concerns. Under this plan they gain valuable experience and earn a large part of their college expenses. Full-time curricula are available for students who do not desire the Co-operative Plan.

In addition to the above schools the University has affiliated with it and conducts the Lincoln Technical Institute offering, through evening classes, courses of college grade in various fields of engineering leading to the degree of Associate in Engineering; and the Lincoln Preparatory School, an accredited evening school preparing for college entrance and offering other standard high school programs.

For further information regarding any of the above schools, address

NORTHEASTERN UNIVERSITY

360 Huntington Avenue

BOSTON 15, MASS.

Telephone: COpley 7-6600

LINCOLN TECHNICAL INSTITUTE

Evening Sessions



1952-1953

FIFTY-FIRST YEAR

College Courses in Engineering

INTERVIEWS

Prospective students, or those desiring advice or guidance regarding any part of the school work or curricula, are encouraged to arrange for personal interviews with the Dean or other officers of instruction. Career planning through competent guidance provides an understanding of professional requirements and develops that definiteness of purpose so vital to success.

OFFICE HOURS

SEPTEMBER 2, 1951 — JUNE 28, 1952

Monday — Friday 8:45 A.M.—9:00 P.M.
Saturdays 8:45 A.M.—12:00 NOON

JUNE 30, 1952 — AUGUST 16, 1952

Monday and Thursday 8:45 A.M.—9:00 P.M.
Tuesday, Wednesday and Friday 8:45 A.M.—5:00 P.M.

AUGUST 18, 1952 — JUNE 27, 1953

Monday — Friday 8:45 A.M.—9:00 P.M.
Saturdays 8:45 A.M.—12:00 NOON

CALENDAR

1952

Advanced Standing and Condition Examinations.	SEPTEMBER	5
Classes Begin	SEPTEMBER	15
Legal Holiday. No Classes	OCTOBER	13
Legal Holiday. No Classes	NOVEMBER	11
Legal Holiday. No Classes	NOVEMBER	27
Final Class Session before Christmas Recess.	DECEMBER	20

1953

First Class Session after Christmas Recess.	JANUARY	5
Division B Classes Begin	JANUARY	6
Second Semester Begins	FEBRUARY	2
Legal Holiday. No Classes	FEBRUARY	23
Legal Holiday. No Classes	APRIL	20
Final Examinations	MAY	25-30
Legal Holiday. No Classes	MAY	30
Summer Term Classes Begin	JUNE	8
Commencement	JUNE	21

LINCOLN TECHNICAL INSTITUTE

Evening Engineering Courses of College Grade

1952



1953

The Institute is situated at the entrance to the
Huntington Avenue subway within nine minutes
of Park Street and easily accessible from all points.

The Lincoln Technical Institute offers courses in Engineering leading to the Degree of Associate in Engineering which, through co-operation with Northeastern University Evening School of Business, carry credit toward the Degree of Bachelor of Business Administration in Engineering and Management awarded by Northeastern University.

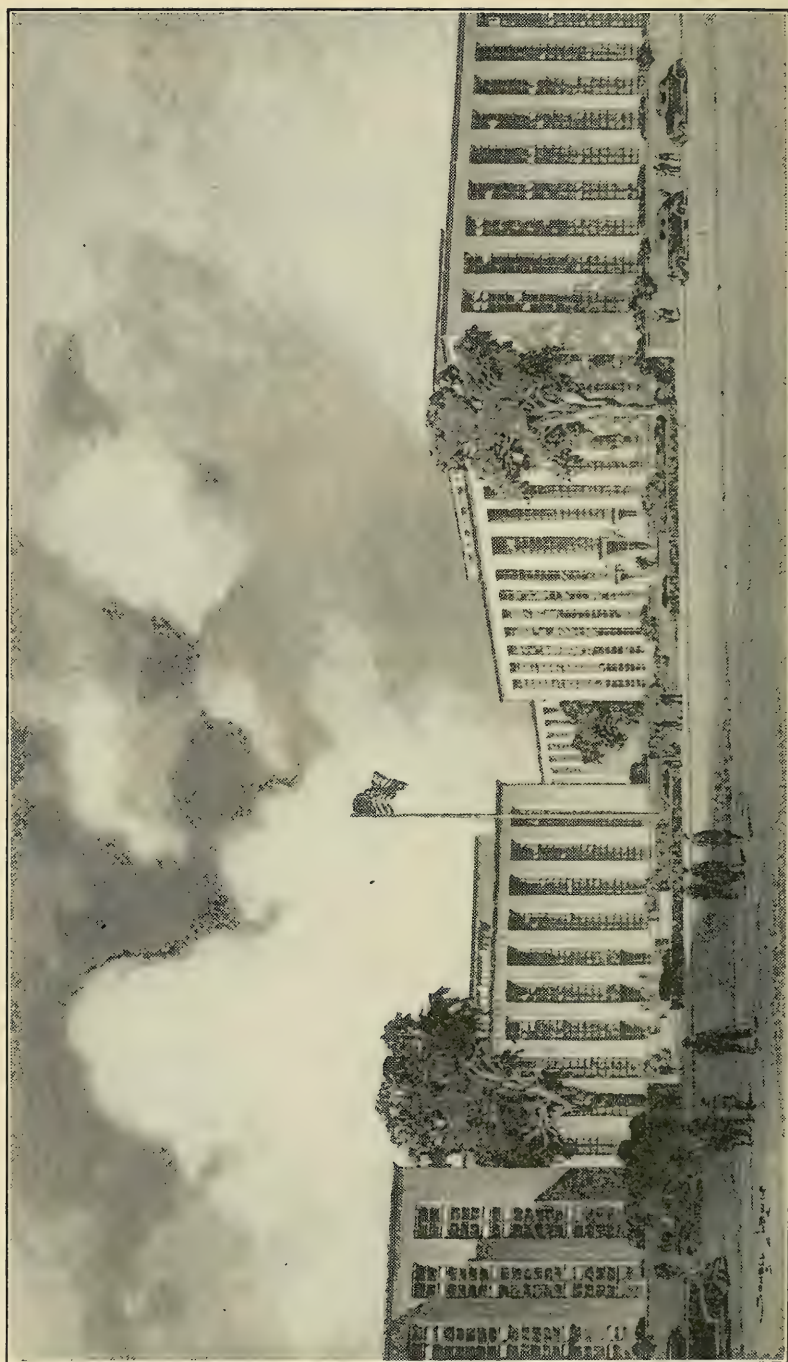


TABLE OF CONTENTS

Page

ADMINISTRATIVE ORGANIZATION.....	4
FACULTY	5
LINCOLN TECHNICAL INSTITUTE, GENERAL STATEMENT.....	13
GENERAL INFORMATION	15
Student Body.....	15
The Campus.....	15
Transportation.....	16
Library and Study Areas	16
Textbooks and Supplies.....	16
Visitors	16
Scholarships.....	17
Dean's List.....	17
Scholarship Awards.....	17
ADMISSION REQUIREMENTS.....	18
CLASSIFICATION OF STUDENTS.....	19
ADMINISTRATIVE REGULATIONS.....	20
TUITION AND FEES.....	24
PROGRAMS OF INSTRUCTION.....	27
Special Course in Chemistry.....	28
Chemistry.....	29
Civil and Structural Engineering.....	30
Electrical Engineering.....	31
Electronic Engineering.....	32
Industrial Engineering.....	33
Mechanical Engineering.....	34
Bachelor of Business Administration Program.....	35
ALPHABETICAL LIST OF SUBJECTS IN ALL CURRICULA	36
ENGINEERING LABORATORIES.....	38
DESCRIPTION OF COURSES.....	45
Chemistry.....	45
Civil Engineering.....	47
Electrical Engineering.....	49
Electronic Engineering.....	51
Industrial Engineering.....	53
Mechanical Engineering.....	54
Drawing.....	56
Mathematics.....	57
Physics.....	58

LINCOLN TECHNICAL INSTITUTE

BOARD OF TRUSTEES

ROBERT GRAY DODGE

Chairman

FRANK LINCOLN RICHARDSON

Vice-Chairman

GEORGE LOUIS BARNES
FARWELL GREGG BEMIS
RICHARD L. BOWDITCH
GODFREY LOWELL CABOT
WALTER CHANNING
WILLIAM CONVERSE CHICK
EVERETT AVERY CHURCHILL
PAUL FOSTER CLARK
MARSHALL BERTRAND DALTON
EDWARD DANA
DAVID FRANK EDWARDS
CARL STEPHENS ELL
WILLIAM PARTRIDGE ELLISON
ROBERT GREENOUGH EMERSON
JOHN WELLS FARLEY
ERNEST BIGELOW FREEMAN
MERRILL GRISWOLD
GEORGE HANSEN
CHANDLER HOVEY

MAYNARD HUTCHINSON
RAY E. JOHNS
MICHAEL T. KELLEHER
HARRY HAMILTON KERR
IRVING EDWIN MOULTROP
GEORGE OLMSTED, JR.
AUGUSTIN HAMILTON PARKER, JR.
FREDERICK SANFORD PRATT
ROGER PRESTON
WILLIAM MCNEAR RAND
STUART CRAIG RAND
JAMES LORIN RICHARDS
HAROLD BOURS RICHMOND
CHARLES FOREST RITTENHOUSE
GIFFORD K. SIMONDS, JR.
FRANCIS ROBERT CARNEGIE STEELE
CHARLES STETSON
EARL PLACE STEVENSON
ROBERT TREAT PAINE STORER

OFFICERS OF ADMINISTRATION

CARL STEPHENS ELL, A.B., M.S., Ed.M., Sc.D.

President

EVERETT AVERY CHURCHILL, A.B., Ed.D.

Vice-President

ALBERT ELLSWORTH EVERETT, B.C.E., S.B., M.B.A.

Director of Evening Program

DONALD HERSHEY MACKENZIE, B.Ch.E., S.B., Ed.M.

Dean

OFFICE STAFF

ANNE M. MOORE

Administrative Secretary

JOAN M. CARR

Secretary

KATHERINE A. CROWLEY

Secretary-Recorder

HELEN A. DOLAN

Typist

FACULTY

THE STRENGTH of any educational institution lies in the quality of its faculty. This is especially true in a technical institute devoted to the training of mature men and women most of whom are already employed in their chosen professions.

The instructional staff of the Lincoln Technical Institute is composed of men who have an active interest in the welfare of ambitious evening school students. They are men of culture and high ideals and are well qualified by training and experience to teach in their respective fields.

CHARLES M. ANDERSON *Appointed 1949*
B.C.E. Northeastern University, 1930; LL.B. Suffolk University, 1942; Deputy Engineer, Land Court.
Surveying

KENNETH N. ASTILL *Appointed 1949*
B.S. Rhode Island State College, 1944; M.A.E. Chrysler Institute of Engineering, 1946; Assistant Professor, Tufts College.
Heat Engineering

HOLLIS BAIRD *Appointed 1945*
Instructor in Physics, Northeastern University; Consulting Engineer, Radio and Television.
Industrial Electronics, Radio Receivers and Transmitters, Frequency Modulation, Television
Chairman of the Department of Electronic Engineering

G. WARREN BATES *Appointed 1949*
B.S. Massachusetts Institute of Technology, 1926; M.A. Boston University, 1938; Instructor, Medford High School.
Sub-Freshman Mathematics, Engineering Mathematics

RALPH S. BLANCHARD, JR. *Appointed 1950*
B.S. University of New Hampshire, 1950; Instructor, Mechanical Engineering Department, Northeastern University.
Mechanical Engineering Laboratory

EDWARD BOBROFF *Appointed 1946*
B.M.E. Polytechnic Institute of Brooklyn, New York, 1940; Electrical Engineer, Boston Navy Yard; Registered Professional Engineer.
Engineering Mathematics

FLETCHER S. BOIG *Appointed 1945*
B.S. Tufts College, 1932; M.S. Massachusetts Institute of Technology, 1933; Ed.M. Tufts College, 1937; Assistant Professor in Chemistry, Northeastern University.
Chemistry
Chairman of the Department of Chemistry

EARL GEORGE BOYD *Appointed 1946*
A.B. University of Maine, 1920; M.A. Boston University, 1935; Head of Mathematics Department and Director of Mathematics for the City of Chelsea.
Advanced Mathematics

- HAROLD B. BRISTOL *Appointed 1946*
A.B. Albion College, 1928; B.S.E.E. University of Michigan, 1932; Engineer,
Raytheon Manufacturing Company.
Direct and Alternating Current Theory
- CURTIS C. BROOKS *Appointed 1937*
B.M.E. Northeastern University, 1924; A.M. Boston University, 1937; Instructor in
Mathematics, Framingham High School.
Applied Mechanics
- GEORGE E. BURDICK *Appointed 1950*
A.B. Boston University; Audio Engineer, New England Conservatory of Music.
Electronic Laboratory
- FREDERICK S. BURRELL *Appointed 1950*
B.S. Kansas State College, 1947; M.S. Kansas State College, 1950; Instructor,
Department of Mechanical Engineering, Massachusetts Institute of Technology.
Applied Mechanics
- FRANCIS J. CALLAHAN *Appointed 1948*
B.S. Northeastern University, 1948; Project Engineer, O. G. Kelley & Co.
Mechanical Engineering Laboratory
- MICHAEL A. CANGIANO *Appointed 1946*
S.B. Harvard University, 1933; Ed.M. Tufts College, 1949; Head of Physics De-
partment, Medford High School.
Engineering Mathematics
- WALTER A. CARLSON *Appointed 1948*
B.S. in Electrical Engineering, Tufts College, 1941; Application Engineer, Westing-
house Electric Corporation.
Direct and Alternating-Current Theory
- LAURENCE FULLER CLEVELAND *Appointed 1931*
B.S. Worcester Polytechnic Institute, 1929; M.S. Massachusetts Institute of Tech-
nology, 1935; Associate Professor of Electrical Engineering, Northeastern University.
Direct and Alternating-Current Machinery
Chairman of the Department of Electrical Engineering
- EDWARD M. COOK *Appointed 1941*
A.B. Harvard University, 1935; M.A. Boston University, 1947; Assistant Professor
of Mathematics, Northeastern University.
Advanced Mathematics
Chairman of the Department of Advanced Mathematics
- GEORGE W. COSTA *Appointed 1949*
B.S. Northeastern University, 1943; Chemist, Sylvania Electric Products, Inc.
Qualitative Chemistry Lectures, Quantitative Chemistry Lectures
- ALBERT L. COYNE *Appointed 1948*
B.S. University of Maine, 1915; Ed.M. Harvard University, 1937; Instructor,
Rindge Technical School.
Engineering Drawing
- OTIS F. CUSHMAN *Appointed 1937*
B.S. University of New Hampshire, 1932; M.S. University of New Hampshire, 1934;
Associate Professor of Drawing, Northeastern University.
Engineering Drawing

- HARRY F. DAVIS *Appointed 1950*
S.B. Massachusetts Institute of Technology, 1948; Graduate Student, Massachusetts Institute of Technology.
Advanced Mathematics
- WARREN C. DEAN *Appointed 1941*
A.B. Boston University, 1931; M.A. Boston University, 1940; Assistant Professor of Mathematics, Northeastern University.
Advanced Mathematics
Chairman of the Department of Engineering Mathematics
- BERNARD W. DEVINE *Appointed 1950*
A.M.E. Lincoln Technical Institute, 1949; Superintendent of Power and Distribution, American Optical Company, Southbridge.
Mechanical Engineering Laboratory
- JOHN JAMES DEVINE *Appointed 1939*
B.S. Rhode Island State College, 1927; M.S. Brown University, 1936; Associate Professor of Drawing, Northeastern University.
Engineering Drawing
- GILMORE C. DICKEY, JR. *Appointed 1944*
Associate in Engineering, Lincoln Technical Institute, 1943; Electrical Engineer, Anderson-Nichols & Co.
Direct-Current Theory, Electrical Machinery
- CHARLES E. DUFFY *Appointed 1951*
A.B. Boston College, 1924; M.S. Boston College, 1930; M.Ed. Boston Teachers College, 1940; Master, High School of Commerce.
Physics
- CHARLES PHILIP ENGELHARDT, JR. *Appointed 1942*
B.S. Harvard University, 1928; Master of Architecture, Harvard University, 1930; Architect, Kilham, Hopkins, Greeley & Brodie.
Machine Drawing
- ARTHUR L. EVANS *Appointed 1946*
A.B. Boston College, 1922; M.S. Boston College, 1923; Master in Science Department, Boston English High School.
Physics
- GEORGE R. FAXON *Appointed 1949*
A.B. Harvard University, 1928; M.S. University of New Hampshire, 1932; Instructor in Mathematics, Boston Latin School.
Sub-Freshman Mathematics
- PATRICK H. FERZOCO *Appointed 1949*
Lowell Institute, 1926; Senior Instructor at Wentworth Institute.
Engineering Drawing
- WILLIAM D. FINAN *Appointed 1946*
A.B. Boston College, 1938; M.A. Columbia University, 1941; Instructor in Mathematics, Weeks Junior High School, Newton.
Sub-Freshman Mathematics
- DAVID H. FLEMING *Appointed 1946*
Worcester Polytechnic Institute, 1915; Plant Engineer, Eastern Roofing Division, Bird & Son, Inc.
Engineering Drawing

- ARTHUR R. FOSTER *Appointed 1949*
B.S. Tufts College, 1945; M.E. Yale University, 1949; Instructor, Mechanical Engineering Department, Northeastern University.
Mechanical Engineering Laboratory
- JOHN L. FREEDMAN *Appointed 1949*
S.B. Massachusetts Institute of Technology, 1932; Engineer, Transducer Corporation.
Electron Tube I and II, Electronic Laboratory
- MELVIN W. FRIEDMAN *Appointed 1948*
S.B. Massachusetts Institute of Technology; Instructor, Boston University.
Engineering Drawing
- SAMUEL M. GIVEEN *Appointed 1952*
A.B. Bowdoin College, 1942; A.M. Harvard, 1951; Instructor in Mathematics, Northeastern University.
Engineering Mathematics
- FRANK A. HAMILTON *Appointed 1947*
S.B. Lincoln Technical Institute, 1939; Structural Engineer, Jackson & Moreland.
Structural Drawing
- FRANCIS R. HANKARD *Appointed 1946*
B.S. Northeastern University, 1946; M.A. Boston University, 1949; Assistant Chemist, Massachusetts State Police.
Physics
- GEORGE W. HANKINSON *Appointed 1944*
B.A. Mount Allison University, 1937; S.B. Northeastern University, 1943; M.S. Harvard University, 1951; Assistant Professor in Civil Engineering, Northeastern University.
Surveying
- EARLE D. HARDY *Appointed 1947*
A.E. Lincoln Technical Institute, 1946; B.B.A. Engineering and Management, Northeastern University, 1947; Superintendent, Town of Norwood Municipal Light Department.
Strength of Materials
- ROBERT L. HARRINGTON *Appointed 1948*
B.M.E. Clarkson College of Technology, 1939; M.S. Case Institute of Technology, 1941; Assistant Professor of Mechanical Engineering, Tufts College.
Heat Engineering
- ERIC HARRISON *Appointed 1949*
Wentworth Institute, 1920; B.S. Suffolk University, 1937; M.A. Suffolk University, 1951; Instructor in Mechanical Drawing, Medford High School.
Engineering Drawing
- JAMES C. HEBARD, JR. *Appointed 1946*
B.S. Northeastern University, 1943; Senior Mechanical Engineer, Computer Department, Equipment Engineering Division, Raytheon Manufacturing Company.
Machine Design
- DAVID E. HIGGINBOTHAM *Appointed 1947*
S.B. Northeastern University, 1944; S.M. Massachusetts Institute of Technology, 1948; Assistant Professor of Electrical Engineering, Tufts College.
Advanced Electrical Laboratory
- PERCY H. HILL *Appointed 1950*
B.M.E. Rensselaer Polytechnic Institute, 1944; M.S. Harvard University, 1951; Instructor in Engineering, Tufts College.
Strength of Materials

- ROBERT EDGAR HODGDON *Appointed 1927*
B.S. University of New Hampshire; M.S. Massachusetts Institute of Technology;
Instructor, Rindge Technical School.
Physics
- DAVID M. HOWELL *Appointed 1951*
B.S. University of California, 1945; M.S. University of Michigan, 1947; Ph.D. Uni-
versity of Michigan, 1952; Instructor in Chemistry, Northeastern University.
Physical Chemistry
- EVERETT L. HUME *Appointed 1950*
B.S. 1933, M.S. 1933, Massachusetts Institute of Technology; Engineer, Jackson &
Moreland.
Hydraulics
- EMORY IRELAND *Appointed 1950*
B.S.C.E. West Virginia University, 1936; Engineer, Structural Division, Stone &
Webster Engineering Corp.
Structural Design
- ALBERT D. JOHNSON *Appointed 1945*
B.S. Northeastern University, 1941; A.M. Boston University, 1946; Ph.D. Boston
University, 1951; Air Force Cambridge Research Center.
Physics
- ARTHUR E. JOHNSON *Appointed 1947*
B.S. Carnegie Institute of Technology, 1939; Assistant Professor of Engineering
Graphics, Massachusetts Institute of Technology.
Engineering Drawing
- CHRISTOPHER F. KENNEDY *Appointed 1949*
A.B. Harvard University, 1944; Ed.M. Boston Teachers College, 1947; Assistant
Professor of Mathematics, Northeastern University.
Advanced Mathematics
- JOHN JOSEPH KLEIN *Appointed 1949*
B.S. Northeastern University, 1949; Instructor in Electrical Engineering, North-
eastern University.
Direct and Alternating-Current Machinery Laboratory
- HORATIO W. LAMSON *Appointed 1945*
B.S. Massachusetts Institute of Technology, 1915; M.A. Harvard University, 1917;
Research Engineer, General Radio Company.
*Direct and Alternating-Current Theory, Electron Tubes and Circuits I, Electronic Tests and
Measurements*
- HERBERT C. LANG *Appointed 1936*
B.S. Northeastern University, 1934; Chief Draftsman, Mason-Neilan Regulator
Company.
Machine Drawing
- JOHN ROBERT LEIGHTON *Appointed 1915*
B.C.E. Northeastern University, 1914; Lens Manufacturer, John R. Leighton.
Applied Mechanics, Strength of Materials
Chairman of Department of Applied Mechanics
- DEANE LENT *Appointed 1949*
A.B. Dartmouth College, 1930; Assistant Professor, Mechanical Engineering, Massa-
chusetts Institute of Technology.
Mechanism
- EDWARD F. LOBACZ *Appointed 1951*
B.S.C.E. Northeastern University, 1943; M.S.C.E. Harvard University, 1948;
Soils Engineer, New England Division, Corps of Engineers, U. S. Army, Boston, Mass.
Structural Analysis

- ANDREW G. LOFGREN *Appointed 1946*
Lowell Institute, 1932; A.A. Harvard University, 1942; Ed.M. Boston University, 1946; Junior Master, Mechanical Drawing, Boston Technical High School.
Engineering Drawing
- KENNETH A. LUCAS *Appointed 1950*
S.B. Massachusetts Institute of Technology, 1925; M.Ed. Boston University, 1931; Civil Engineer, Whitman & Howard, Inc.
Surveying
- ALVIN MANDELL *Appointed 1950*
B.E.E. College of the City of New York, 1943; Graduate Student, Northeastern University; Senior Development Engineer, Transducer Corp.
Electron Tubes and Circuits I and II; Electronic Laboratory
- ALFRED G. MARCOTTE *Appointed 1950*
B.S. Tufts College, 1950; Instructor, Electrical Department, Northeastern University.
Direct and Alternating-Current Machinery Laboratory
- LEVON MASERIAN *Appointed 1951*
A.E.E. Lincoln Technical Institute, 1950; Technical Sales Engineer, Browning Laboratories, Inc.
Advanced Electronic Laboratory
- HAROLD K. MCAFEE *Appointed 1949*
B.S.C.E. Norwich University, 1943; Structural Designer, Fay, Spofford & Thorndike.
Strength of Materials
- NORMAN S. MCCALLISTER *Appointed 1946*
A.B. Bates College, 1931; Ed.M. Bates College, 1938; Assistant Professor of Mathematics, Northeastern University.
Advanced Mathematics
- EDWARD F. MCCARREN, JR. *Appointed 1951*
A.E.E. Lincoln Technical Institute, 1951; Electronic Technician, Northeastern University.
Advanced Electronic Laboratory
- WALDEMAR S. MCGUIRE *Appointed 1936*
S.B. Massachusetts Institute of Technology, 1918; M.A. Boston University, 1930; Associate Professor of Chemistry, Northeastern University.
Qualitative and Quantitative Chemistry
- GEORGE HARRIS MESERVE, JR. *Appointed 1929*
B.C.E. Northeastern University, 1925; B.S. Northeastern University, 1931; Ed.M. Boston University, 1940; Professor of History and Art, Northeastern University.
Engineering Drawing
Chairman of the Department of Engineering Drawing
- CARL MILLER *Appointed 1947*
A.B. Harvard University, 1929; LL.B. Boston University, 1933; Ed.M. Boston Teachers' College, 1935; Instructor, Boston School Department.
Engineering Mathematics
- ERNEST E. MILLS *Appointed 1947*
B.S. Northeastern University, 1946; Instructor Mechanical Engineering, Northeastern University.
Mechanical Engineering Laboratory
- H. CARLTON MOORE *Appointed 1948*
S.B., 1924; S.M., 1933; Sc.D., 1941, Massachusetts Institute of Technology; Senior Mechanical Engineer, Metcalf & Eddy.
Heat Engineering
- JOHN J. NILAND *Appointed 1950*
Lowell Institute, 1939; Assistant Design Engineer, Stone & Webster Engineering Corp.
Structural Analysis

- LOUIS NOVAK *Appointed 1952*
Drawing and Painting Diploma, Massachusetts School of Art, 1926; B.S.E. Massachusetts School of Art, 1938; Instructor of Engineering Drawing, Wentworth Institute; Professional Artist.
Engineering Drawing
- JOHN R. O'BRIEN *Appointed 1946*
A.B. Boston College, 1933; A.M. Boston College, 1934; Instructor in Mathematics; Junior Master, Boston School Department.
Engineering Mathematics
- ANDREW G. OSTERBERG *Appointed 1950*
A.M.E. Lincoln Technical Institute, 1949; Chief Engineer, Tileston & Hollingworth Co.
Mechanical Engineering Laboratory
- WILLIAM C. PAXTON *Appointed 1945*
B.C.E. Northeastern University, 1930; Engineer and Contractor; Superintendent of Public Works, Canton, Mass.
Transportation Engineering, Hydraulics
- WINFIELD C. POTTER *Appointed 1944*
Ph.B. Brown University, 1910; Ed.M. Rhode Island College of Education, 1938; Principal, Foxboro High School.
Engineering Mathematics
- EDWIN B. PRAY *Appointed 1950*
Graduate Program, Northeastern University; Department Head, Engineering Test Laboratory, Sylvania Electric Products, Inc.
F. M. and Television Laboratory
- GERALD PUTNAM *Appointed 1947*
S.B. Massachusetts Institute of Technology, 1923; Assistant Professor, Massachusetts Institute of Technology.
Engineering Mathematics
- RICHARD S. RICE *Appointed 1951*
B.S. Dartmouth College, 1944; M.S. Massachusetts Institute of Technology, 1946; Civil Engineer, Jackson & Moreland.
Concrete Design
- HENRY ROCKWELL *Appointed 1950*
B.S. London University, 1943; Engineer, Raytheon Manufacturing Company.
Machine Design
- GUSTAV ROOK *Appointed 1941*
B.S. Northeastern University, 1939; Graduate Study, Harvard and Northeastern Universities; Assistant Professor in Drawing, Northeastern University.
Machine Drawing
- DAVID E. ROSENGARD *Appointed 1946*
A.B. Harvard College, 1931; A.M. Harvard University, 1932; Master, Boston Public High Schools.
Advanced Mathematics
- BARNET RUDMAN *Appointed 1942*
A.B. Harvard University, 1921; Ed.M. Boston Teachers' College, 1934; Instructor, English High School.
Engineering Mathematics
- ALBERT E. SANDERSON, JR. *Appointed 1936*
B.C.E. Northeastern University, 1926; B.S. Northeastern University, 1940; M.S. Harvard University, 1944; Assistant Professor of Drawing, Northeastern University.
Structural Design
- FRANK W. SARNOW, JR. *Appointed 1948*
B.S. Northeastern University, 1939; Field Superintendent, Kilham, Hopkins, Greeley & Brodie, Architects.
Structural Drawing

- CHARLES F. SEAVERN *Appointed 1941*
 Harvard University, 1915-17; Associate in Engineering, Lincoln Technical Institute, 1944; Graduate work in Education, Boston University; Instructor, Everett High School.
Engineering Drawing
- RALPH W. SEXTON *Appointed 1949*
 B.S. Northeastern University, 1949; Engineering Department, F. S. Payne Co.
Mechanical Engineering Laboratory
- ROBERT A. SHEPARD *Appointed 1951*
 B.S. Yale University, 1944; Ph.D. Yale University, 1950; Assistant Professor in Chemistry, Northeastern University.
Organic Chemistry
- ERNEST L. SPENCER *Appointed 1941*
 B.S. Northeastern University, 1936; M.S. Harvard University, 1943; Associate Professor of Civil Engineering, Northeastern University.
Concrete Design *Chairman of the Department of Civil Engineering*
- FREDERICK ARLINGTON STEARNS *Appointed 1921*
 B.S. 1917, M.S. 1934, Massachusetts Institute of Technology; Associate Professor of Mechanical Engineering, Northeastern University.
Heat Engineering *Chairman of the Department of Mechanical Engineering*
- JOHN F. TWIGG *Appointed 1951*
 B.S. U. S. Naval Academy, 1943; M.A. Boston University, 1950; Instructor in Engineering Graphics, Massachusetts Institute of Technology.
Advanced Mathematics
- THOMAS H. WALLACE *Appointed 1941*
 B.S. Boston University, 1933; M.A. Harvard Graduate School, 1936; Ph.D. Boston University, 1939; Associate Professor of Physics, Northeastern University.
Physics *Chairman of the Department of Physics*
- JOHN E. WALSH *Appointed 1947*
 A.B. St. Michael's College, 1938; A.M. Boston University, 1940; Research Engineer, Air Force Cambridge Research Center.
Engineering Mathematics
- JOHN L. WARNER *Appointed 1948*
 B.S. Tufts College, 1942; M.S. Harvard University, 1950; Assistant Professor of Electrical Engineering, Tufts College.
Alternating-Current Machinery, Transmission Line Theory, Electronics for Industry
- GEORGE B. WELCH *Appointed 1946*
 B.S. Bowdoin College, 1922; Ph.D. Cornell University, 1928; Associate Professor of Physics, Northeastern University.
Physics
- RALPH E. WELLINGS *Appointed 1944*
 A.B. Boston College, 1920; A.M. Boston College, 1925; Ed.M. Boston Teachers' College, 1930; Head of Science Department, Dorchester High School for Boys.
General Chemistry, Physics
- ALBERT G. WILSON, JR. *Appointed 1948*
 B.S. in Civil Engineering, Thayer School, Dartmouth, 1946; M.S. Case Institute of Technology, 1948; Structural Designer, Metcalf and Eddy.
Applied Mechanics
- JOSEPH W. ZELLER *Appointed 1950*
 B.S. 1908, M.E. 1908, Tufts College; Professor of Mechanical Engineering, Northeastern University.
Machine Design
- RUSSELL D. ZIMMER *Appointed 1951*
 B.S. Tufts College, 1947; Instructor, Mechanical Engineering Department, Northeastern University.
Mechanical Engineering Laboratory

THE LINCOLN TECHNICAL INSTITUTE

THE LINCOLN TECHNICAL INSTITUTE is affiliated with Northeastern University. It offers evening engineering courses of college grade leading to the Degree of Associate in Engineering from Northeastern University. These courses are acceptable towards the degree of B.B.A. in Engineering and Management offered by Northeastern University Evening School of Business.

All classes in the Lincoln Technical Institute are held in the evening and are especially designed to meet the needs of those who are employed during the day.

The Lincoln Technical Institute has its origin in the Northeastern Evening Polytechnic School. The latter received its title in 1901, when the work of various technical departments, such as the Department of Steam Engineering, the Department of Art, the Automotive School and the Department of Naval Architecture, were grouped together into curricula. By 1904 the School offered definite curricula, generally of three years' duration, in Architecture, Chemistry, Marine Engineering, Structural Engineering, Steam Engineering, along with courses in Art, Navigation, Surveying, Seamanship, and other related fields. In 1925 the title Lincoln Technical Institute was given to the Northeastern Evening Polytechnic School. At this time the Lincoln Technical Institute remodeled, lengthened and consequently improved the former courses, offering a number of four-year curricula, which are described on pages 28 to 34.

In addition, provision was made so that students need not pursue a complete curriculum but could elect individual courses related to their present occupations, the only prerequisite of entry being ability to pursue the course with profit to themselves. At the present time there are over nineteen hundred students receiving instruction in the Lincoln Technical Institute in the various branches of engineering.

Since 1936 the curricular courses of the Institute have been credited by Northeastern University Evening School of Business towards the Degree of Bachelor of Business Administration in Engineering and Management offered by that school.

Effective 1939 Northeastern University awarded the Title of Associate in Engineering to those who satisfactorily complete any one of the prescribed curricula. Effective with the Commencement

Exercises, June, 1944, the Degree of Associate in Engineering has been awarded.

The Officers of Administration are constantly alert to changing conditions and from time to time will modify existing courses to meet new needs and develop new courses so that real educational opportunities will be available to employed men and women at convenient evening hours. The School is sincerely interested in the problems of each student and the Dean and the officers of instruction encourage interviews for vocational and educational guidance.

The Lincoln Technical Institute has made it possible for many men to secure training which has enabled them to succeed in the work for which they are adapted by ability and interest.

GENERAL INFORMATION

STUDENT BODY

THE STUDENTS of the Lincoln Technical Institute are men and women of earnest purpose and firm endeavor who bring to bear on their work a thoroughness which promises future success. Their ages last year ranged from seventeen to fifty-two, the average age being twenty-six years. Almost all the students are engaged in work during the day and many different occupations have their representatives in the student body, a fact which demonstrates that the School can be of service to men in many walks of life. Some students are preparing to enter engineering work; many are already engaged in engineering work and are studying to prepare themselves for increased responsibility and rewards.

THE CAMPUS

THE LINCOLN TECHNICAL INSTITUTE is affiliated with Northeastern University and enjoys the use of all the excellent classrooms and modern laboratory facilities. It is easily reached from the North and South Stations, and from the various points of the Metropolitan Transit Authority System since it is situated at the entrance of the Huntington Avenue Subway.

The work of the School is carried on in the following buildings:

RICHARDS HALL contains the administrative headquarters of the Institute. The major portion of the building is given over to laboratory and classroom areas. Laboratory space is provided for the following: Mechanical Engineering, General and Advanced Physics, Radio, Inorganic, Organic, Analytical and Physical Chemistry, together with several research laboratories.

SCIENCE HALL, completed in 1941, contains the Chemical Engineering and Biological Laboratories, student activities rooms, classrooms, conference rooms and lecture halls for meetings of professional engineering societies and the Business Administration Laboratory.

BOTOLPH BUILDING is largely devoted to work in Electrical and Civil Engineering. Here are located the Sanitary, Concrete, Photogrammetric, Electronics, and Electrical Measurements and Dynamo Laboratories in addition to department offices, classrooms and conference rooms.

THE STUDENT CENTER BUILDING contains administrative offices and facilities for student activities. There are reading and study

rooms, lounges, additional classrooms, University commons and an auditorium seating 1,350 for student convocations.

THE LIBRARY BUILDING, completed April 1, 1952, provides five reading rooms seating over 600 students and a stack capacity for about 170,000 volumes. In addition to the special facilities of a modern university library it also houses the Department of Drawing and has a number of classrooms.

TRANSPORTATION

THE RAILROAD SYSTEMS entering Boston issue students' tickets to students under twenty-one years of age. Veterans regardless of age are eligible for reduced rates on most of the railroads. Applications for these may be obtained at a railroad office and must be presented at the school office for signature.

The Administrative Office will do everything possible to make share-the-ride arrangements among members of the student body to accommodate those who have transportation problems.

LIBRARY AND STUDY AREAS

THE UNIVERSITY LIBRARY is well equipped in technical literature and is available for use of students of the Institute. The reading rooms are open from 9:00 A.M. to 7:30 P.M. on weekdays, and from 9:00 A.M. to 12:00 NOON on Saturdays. The privilege of obtaining books from the Boston Public Library is extended to students of the Institute. Applications for this privilege should be made at the Administrative Office of the Institute where the necessary blanks may be obtained.

Adequate study areas are available in the Library and Student Center Building for student use.

TEXTBOOKS AND SUPPLIES

THE UNIVERSITY BOOKSTORE is operated for the convenience of the student body. All books and supplies which are required by the students for their work in the Institute may be purchased at the Bookstore. Students taking Engineering Drawing should be prepared to expend a sum of approximately \$14.00 for drawing supplies, exclusive of the cost of a satisfactory set of drawing instruments.

VISITORS

Visitors are always welcome at one class session in any department. Those who wish to visit any of the classes should call at the school office and obtain a visitor's card signed by the Dean.

SCHOLARSHIPS

The Executive Council has made available a few scholarships to assist needy students of good mental capacity who, because of financial limitations, might be deprived of educational opportunities. The award when a scholarship is granted may range up to one-half of the cost of tuition for the year, depending upon the student's need and scholastic achievement.

DEAN'S LIST

A Dean's List, issued at the end of each school year, contains the names of all students who have, while carrying a full program (three subjects), attained a scholastic grade of 85%, or better, in each subject.

AWARDS FOR SCHOLASTIC ACHIEVEMENTS

For the school year 1952-53 the Executive Council has offered the following scholarships. To the highest ranking Sub-Freshman, Division A and B Freshman, Sophomore and Junior who returns for the following school year a one-half scholarship of \$90. To the second highest ranking Sub-Freshman, Division A and B Freshman, Sophomore and Junior who returns for the following school year a one-quarter scholarship of \$45. These scholarships will be awarded only to students pursuing a full program for the Degree of Associate in Engineering.

The winners of these scholarships for the past school year were:

<i>Sub-Freshman</i>	<i>First</i> , Erik Erikson <i>Second</i> , Clifford McLatchey
<i>Freshman</i>	
Division A	<i>First</i> , Malcolm Duffee <i>Second</i> , Jack Card and Ralph Alsmeyer
Division B	<i>First</i> , Earl Goodwin <i>Second</i> , John Clough
<i>Sophomore</i>	<i>First</i> , John Calarese <i>Second</i> , Edward Carbreys
<i>Junior</i>	<i>First</i> , Frederick Knight <i>Second</i> , William Skinner

REQUIREMENTS FOR ADMISSION

REGULAR STUDENTS

Applicants for admission who present evidence of completion of an approved secondary school course, or the equivalent of fifteen units (including one unit in Algebra and one in Plane Geometry), may be admitted as regular students, candidates for the Degree of Associate in Engineering and also eligible to proceed later, if they so desire, to the Degree of Bachelor of Business Administration in Engineering and Management offered by Northeastern University Evening School of Business.

CONDITIONED STUDENTS

Applicants for admission who do not meet the full requirements for admission as regular students may, at the discretion of the Committee on Admission, be admitted as conditioned students provided such secondary school work as has been completed embraces one unit of Algebra and one unit of Plane Geometry.

A conditioned student whose scholarship is satisfactory but who has not removed his conditions within the time specified by the Committee on Admission may be permitted to continue with his program of studies, but on the completion of the chosen four-year curriculum he will receive a diploma indicating the completion of the program, but not carrying the award of the Degree of Associate in Engineering.

SPECIAL STUDENTS

Students who wish to register for a special program or for single courses will be admitted as special students, not candidates for the diploma or Degree, provided their previous education and training permit them to pursue the courses with profit.

Programs are planned to meet individual needs and should prove of benefit to those who wish rapid and immediate knowledge of certain fields, whether to supplement former training or to obtain preparation which will permit them to enter a new line of endeavor.

LATE REGISTRATION

Students should avoid late registrations since no one is permitted to join a class after the second session. *No deduction from tuition fees is made because of late enrollment.*

CLASSIFICATION OF STUDENTS

DIVISION A

Students who enter School at the beginning of the normal school year in September are termed Division A students. Programs for these students are arranged so that the work of the school year is completed by May or in early June by attendance three evenings a week. Students, however, may elect to carry a lighter scholastic load than the regular program. Summer courses are not necessary for Division A students.

DIVISION B

All Freshman courses are available in January and those entering School at that time are termed Division B students. They complete two of the Freshman courses between January and the end of May by attending classes three evenings per week. The third of the required courses is taken during the Summer Term. Division B students may thus complete the first-year requirements and continue in September, 1953, with the Sophomore program of courses.

Summer attendance is not compulsory but, in the event that a student does not pursue a summer course, attendance is necessary over a period of five years to complete graduation requirements.

SUB-FRESHMEN

A course in Elementary Algebra and Plane Geometry (Sub-Freshman Mathematics) is available beginning September 16, and ending December 18, 1952, for those students who have not completed courses in Algebra or Plane Geometry or for those students who wish to review these subjects because of the remoteness of their former study of these subjects. This course meets on Tuesday and Friday evenings from 7 to 10 P.M. On the successful completion of this course, students are eligible to begin their first-year engineering studies with Division B students on January 6, 1953. This program permits students to save a year which would otherwise be lost, since it enables them to graduate in the customary period of four years.

In addition to the above course in Sub-Freshman Mathematics, courses in elementary Algebra and Plane Geometry are available in January and June in the Lincoln Preparatory School.

ADMINISTRATIVE REGULATIONS

APPLICATIONS FOR ADMISSION

Applications for admission should be filed as early as possible in order that the necessary investigations may be made and the status of each student definitely determined before the opening day.

REGISTRATION

Each student is required to present himself at the school office, and to have his course approved by the Dean or his assistants and to complete his registration.

In order that the school officers might be in a position to offer proper guidance, every student is required to take a Mathematics Placement Test. This test will be based on the standard first year Algebra course as offered in high school. Students will be advised when and where to report for the test.

THE SCHOOL YEAR

The school year is divided into two semesters of seventeen weeks each. The first semester extends from September 15 to January 30, and the second semester from February 2 to May 27, except that make-up sessions for public holidays may extend either term. Attention is drawn to the fact that Division B students begin their studies on January 6.

GRADUATION REQUIREMENTS

Students may register for single subjects or for complete courses provided such registration meets with the approval of the Dean; but to receive the Degree of Associate in Engineering the student must fulfill the following conditions:

- a.* He must complete all the courses of his particular curriculum, either by attendance at this Institute, or by receiving advanced standing credit for those courses, or the equivalent of those courses, as determined by the Dean.
- b.* He must pass such final examinations as are required in the courses he has pursued. The various curricula have been arranged so that the courses can be completed in four years. However, an extension of time will be granted to those who wish to take longer to meet the requirements for graduation.

- c. Regardless of the advanced standing credit he receives, he must have been in attendance for at least a year preceding the date on which he expects to graduate; that is, he must complete at least one full year's work in the Lincoln Technical Institute.
- d. He must achieve a scholastic average of at least 70% in the courses taken in the Institute. Courses for which a student has been awarded Advanced Standing Credit will not be counted in determining a student's scholastic average.

SESSIONS

Classes meet on weekday evenings. There are no classes on Saturdays. A full schedule will include three evenings a week. As a rule classes are scheduled from 7 P.M. till 9:30 P.M. Laboratory periods in Chemistry are of three hours' duration.

ATTENDANCE REQUIREMENTS

A careful record of attendance upon class exercises is kept for each student. Absence from regularly scheduled classes on any subject will seriously affect the standing of the student. It may cause the removal of certain subjects from his schedule and the listing of these as "conditioned subjects." However, if reasonable excuse for absence be presented, the student may be allowed to make up the time lost, and be given credit for the work; but he must complete the work at such time and in such manner as his instructor in the course shall designate. Students who are absent for four consecutive sessions are automatically withdrawn from the class rolls and may not be admitted to class until they have been reinstated by the Dean.

A minimum attendance record of 75 per cent must be maintained in all classes before a student will be admitted to examination.

Students who are unavoidably absent from class may receive the homework assignments by telephoning the school office.

EXAMINATIONS AND QUIZZES

Tests are held throughout the term at the discretion of the instructors. A test which is missed can be made up only upon petition at the school office, either in person or by telephone, and a fee of \$1.50 will be charged for each test made up. Petitions must be filed not later than the first Saturday of the month following the absence. Make-up tests will be given on the second Saturday of each month at 1:30 P.M., in a designated room in Richards Hall.

Any student who does not take the test in the month following the absence will lose this make-up privilege. Final examinations are required upon the completion of all courses.

The following system of grading is used:

A	— 90 to 100	— Excellent
B	— 80 to 89	— Good
C	— 70 to 79	— Fair
D	— 60 to 69	— Lowest Passing Grade
F	— 50 to 59	— Conditioned Failure
FF	— Below 50	— Complete Failure

A student marked "F" in a final examination may receive one special examination. If he fails in that, he must repeat the course. It is to be noted that a student whose grade is "F" *must petition for re-examination*. Permission to take a make-up examination is a privilege, not a right, and is dependent upon the quality of work the student has done throughout the course.

A student marked "FF" must repeat the course. The fee for each special examination is \$3. Grades and reports are mailed to the students and will not be given out at the school office. Under no circumstances will grades be given over the telephone.

It is to be noted that no student will be permitted to graduate who does not maintain a "C" average and that students who have not maintained such an average by the end of the Sophomore year will not be permitted to continue in School.

TRANSFERS

Students are not permitted to change from one course to another without first consulting the Dean and receiving a Transfer Order signed by him.

REPORTS OF STANDING

An informal report of the student's standing is issued at the end of the seventeenth week; and the formal report, covering the year's record, is issued at the close of each year.

In the case of students who are under twenty-one years of age, reports may be sent to parents in the event of unsatisfactory work on the part of the student, non-compliance with administrative regulations, continued absence, and withdrawal. Parents of minors may obtain reports at any time on request.

STUDENTS ADMITTED WITH ADVANCED STANDING

Advanced Standing Credit may be granted for work completed in other approved schools, colleges or institutions provided the courses taken were equivalent to those offered by the Lincoln Technical Institute. It will be necessary for the applicant to obtain an official transcript of record together with a catalogue and present them to the Dean before any action can be taken.

METHODS OF INSTRUCTION

Instruction is given by means of lectures, recitations, laboratory work and practical work in the drawing rooms. Great value is set upon the educational effect of these exercises, which constitute the foundation of each of the courses. Oral and written examinations are held at the discretion of the instructors.

The attention of every student is drawn to the fact that home assignments must be dutifully done and written work submitted as assigned if the student's grade is not to be seriously affected. Wilful disregard of this matter will result in disciplinary action by the Administrative Officers.

SUBJECTS OF INSTRUCTION

On pages 45 to 58 will be found a detailed statement of the scope of the subjects offered in the various courses. The subjects are numbered for convenience of reference in consulting the various curriculum schedules.

Required courses, and those prerequisite thereto, must have been successfully pursued before any advanced course may be taken.

TUITION AND OTHER FEES

MATRICULATION FEE

A matriculation fee of \$5.00 must accompany the initial application for admission to the Institute. This fee is not refundable.

TUITION

Tuition fees are based on a charge of \$12.00 a semester hour. The student may determine his cost for tuition by consulting the Programs of Instruction shown on pages 28 to 34 where the semester hour credit for each course is indicated.

The schedule for tuition payments for the year is as follows:

Division A Students

The first payment is due during the first week of School and the other three during the weeks of November 10, February 2 and March 30.

Division B Students

The first payment is due during the week of registration and the second during the week of March 10. The Summer Term payment is due during the week of registration in June.

Sub-Freshman Students

The tuition charge for Sub-Freshman Mathematics which runs from September 16 through December 18, 1952, is \$60.00, payable during registration week. The students then continue on January 6, 1953, as Division B students and tuition is charged at the rate of \$12.00 a semester hour, payable as indicated above.

CHEMISTRY FEE

All students taking Chemistry are charged a Chemistry laboratory deposit of \$15.00, payable in September. Those students taking Organic Chemistry are required to make an additional deposit of \$10.00 at the beginning of the second semester.

The unused portion of the deposit will be refunded after deductions are made for breakages, chemicals, supplies and non-returnables.

LATE PAYMENT FEE

Bills for tuition and fees are payable on or before Saturday of the week of issuance. A Late Payment Fee of \$2.00 is charged for all

students failing to comply unless special payment arrangements are approved by the Student Accounts Office.

LATE REGISTRATION FEE

Students are urged to register well in advance of the official opening of the semester, since any student who registers after Saturday of the opening week of the School term is charged a Late Registration Fee of \$5.00.

DEFERRED PAYMENT PRIVILEGE

Students who find considerable difficulty in meeting payments according to the schedule specified above may make other payment arrangements upon consultation with the Dean.

SPECIAL EXAMINATION FEES

The fee for each special examination for advanced standing, for conditioned students, or for students who have for justifiable cause omitted to take the regular scheduled examinations is \$3. The fee must be paid before the examination is taken.

GRADUATION FEE

On completing the curricular requirements for the Degree of Associate in Engineering the student will pay a graduation fee of \$15.00. This fee must be paid by May 15 in the year of the student's graduation.

REFUND OF TUITION

Requests for refunds must be made at the time of filing the application for withdrawal at the school office. If the withdrawal notification is sent in by mail, the refund should be requested in the letter with reasons which necessitate the withdrawal. *No refunds will be granted to a student who voluntarily withdraws* or who has attended more than five weeks of the term for which payment has been made.

Refunds of tuition will be considered only in the following instances:

1. If, because of illness, a student is compelled to withdraw before the fifth week of the term, or
2. If a student who is regularly employed is sent out of town permanently by his employer, or
3. If the hours of employment of a student who is regularly employed are changed so as to make it impossible for him to continue in attendance, or
4. If a student is inducted into military service.

The Committee on Withdrawals will consider requests for tuition refunds only on the following bases:

1. That the application for withdrawal be made immediately after the student ceases attendance;
2. The request for refund is accompanied by an *acceptable* physician's certificate in the instance of illness, or by an *acceptable* employer's certification in the instance of a change in place or hours of employment;
3. Evidence of induction into military service.

For cases complying with the above, partial refunds on tuition for the semester may be allowed according to the following schedule:

Petition for Withdrawal Filed Within: <i>Refund to Students in</i>			
	<i>Regular Term</i>	<i>Div. B Term</i>	<i>Summer Term</i>
One week	80%	80%	80%
Two weeks	80%	80%	60%
Three weeks	60%	60%	40%
Four weeks	40%	40%	20%
Five weeks	20%	20%	0%
Six weeks	0%	20%	0%
After six weeks	0%	0%	0%

The above does not include fixed or non-refundable fees or laboratory fees for which there is no refund allowed.

The official "Application for Withdrawal" form may be obtained in the school office. All refunds are made through the Student Accounts Office of the University. The refund procedure in such cases takes from two to three weeks. A check is mailed directly to the student for any refund to which he is entitled.

PROGRAMS OF INSTRUCTION

LEADING TO THE DEGREE OF ASSOCIATE IN ENGINEERING

The Lincoln Technical Institute offers four-year courses in Chemistry, Civil and Structural Engineering, Electrical Engineering, Electronic Engineering, Industrial Engineering and Mechanical Engineering. Schedules of the various curricula are given on the following pages.

On the satisfactory completion of a prescribed four-year course the Degree of Associate in Engineering is awarded to all regular students.

All these courses are of strictly college grade. In those cases where students are unable, because of circumstances, to carry all of the work prescribed in any year, an extension of time will be granted by the Dean, who will determine which subjects shall be excluded, and also the order in which the omitted subjects shall later be studied.

When a student elects a curriculum he is expected to complete all the subjects in that curriculum in order to receive the Degree.

Graduation from these programs carries four years' credit towards a six-year program leading to the Degree of B.B.A. in Engineering and Management offered by Northeastern University Evening School of Business.

SPECIAL COURSE IN CHEMISTRY**Leading to a Diploma**

FIRST YEAR					
First Semester			Second Semester		
<i>Course No.</i>	<i>Course</i>	<i>Class Hours</i>	<i>Course No.</i>	<i>Course</i>	<i>Class Hours</i>
M1	Algebra.....	2½	M2	Trigonometry.....	2½
*P1	Physics I.....	2½	P2	Physics II.....	2½
		<hr/> 5			<hr/> 5
SECOND YEAR					
*Ch1	General Chemistry.....	2½	Ch2	General Chemistry.....	2½
*ChL1	General Chem. Lab.....	3	ChL2	General Chem. Lab.....	3
		<hr/> 5½			<hr/> 5½
THIRD YEAR					
Ch3	Qualitative Chemistry...	2½	Ch4	Quantitative Chemistry.	2½
ChL3	Qualitative Chem. Lab...	3	ChL4	Quantitative Chem. Lab.	3
		<hr/> 5½			<hr/> 5½
FOURTH YEAR					
*Ch5	Organic Chemistry.....	2½	Ch6	Organic Chemistry.....	2½
*ChL5	Organic Chem. Lab.....	3	ChL6	Organic Chem. Lab.....	3
		<hr/> 5½			<hr/> 5½

These courses carry credit towards the Degree of Associate in Engineering and the Degree of B.B.A. in Engineering and Management offered by Northeastern University Evening School of Business.

Students wishing to pursue programs for the Degree should consult the Dean regarding particulars.

* No credit allowed until completion of second semester.

CHEMISTRY**Leading to the Degree of Associate in Engineering**

The Science of Chemistry and Chemical Engineering has undergone a marked development in recent years. It has grown out of the discoveries of the chemical laboratories which have launched many new industries whose production processes involve chemical as well as physical change. The chemist is in demand and his aid is sought in the operation of plants producing drugs, oils, rayon and cellophane, plastics and various synthetic products resulting from intensive research during the war. The chemist may assist in the creation of more economical manufacturing processes, promote the development of manufacturing by-products, and be instrumental in the discovery of new products in the research laboratories.

In addition to the fundamental courses in chemistry, mathematics, and physics, a considerable amount of time is devoted to more advanced work in chemistry. Since the field is so varied, the curriculum has been designed to give the students a broad training rather than a specialized training in one specific industry.

FIRST YEAR					
First Semester			Second Semester		
<i>Course No.</i>	<i>Course</i>	<i>Class Hours</i>	<i>Course No.</i>	<i>Course</i>	<i>Class Hours</i>
M1	Algebra.....	2½	M2	Trigonometry.....	2½
*P1	Physics I.....	2½	P2	Physics II.....	2½
*D1	Engineering Drawing....	2½	D2	Engineering Drawing....	2½
		7½			7½
SECOND YEAR					
M3	Analytical Geometry }	2½	M6	Integral Calculus.....	2½
M5	Differential Calculus }		Ch2	General Chemistry.....	2½
*Ch1	General Chemistry.....	2½	ChL2	General Chem. Lab....	3
*ChL1	General Chem. Lab....	3			
		8			8
THIRD YEAR					
*ME1	Applied Mechanics I....	2½	ME2	Applied Mechanics II....	2½
Ch3	Qualitative Chemistry .	2½	Ch4	Quantitative Chemistry..	2½
ChL3	Qualitative Analysis Lab.	3	ChL4	Quantitative Analysis Lab.	3
		8			8
FOURTH YEAR					
*Ch7	Physical Chemistry.....	2½	Ch8	Physical Chemistry.....	2½
*Ch5	Organic Chemistry.....	2½	Ch6	Organic Chemistry.....	2½
*ChL5	Organic Chem. Lab....	3	ChL6	Organic Chem. Lab....	3
		8			8

* No credit allowed until completion of second semester.

CIVIL AND STRUCTURAL ENGINEERING

Leading to the Degree of Associate in Engineering

The field of Civil Engineering has to do with the planning and building of all kinds of structures and public works. Today its major branches include topographical, municipal, railroad, highway, structural, hydraulic, and sanitary engineering. It covers land surveying, the building of railroads, soil mechanics, harbors, docks, the construction of sewers, water works, streets and highways, the design and construction of flood control projects, bridges, buildings, walls, foundations, and all fixed structures.

This curriculum is designed to offer the relatively compact body of principles upon which all work in Civil Engineering depends. It is intended to prepare the young civil engineer to take up the work of design and construction of structures, to solve the problems of water supply, and to undertake intelligently the supervision of work in allied fields of engineering and general contracting.

FIRST YEAR					
First Semester			Second Semester		
Course No.	Course	Class Hours	Course No.	Course	Class Hours
M1	Algebra.....	2½	M2	Trigonometry.....	2½
*D1	Engineering Drawing....	2½	D2	Engineering Drawing....	2½
*P1	Physics I.....	2½	P2	Physics II.....	2½
		7½			7½
SECOND YEAR					
M3	Analytical Geometry } ..	2½	M6	Integral Calculus.....	2½
M5	Differential Calculus }	2½	ME2	Applied Mechanics II...	2½
*ME1	Applied Mechanics I....	2½	CE2	Surveying II.....	2½
CE1	Surveying I.....	2½			7½
		7½			7½
THIRD YEAR					
*ME3	Strength of Materials I ..	2½	ME4	Strength of Materials II..	2½
CE3	Transportation Engineer- ing.....	2½	CE4	Hydraulics.....	2½
*CD1	Structural Drawing I....	2½	CD2	Structural Drawing II...	2½
		7½			7½
FOURTH YEAR					
*CE5	Structural Analysis I....	2½	CE6	Structural Analysis II...	2½
*CE7	Concrete Design I.....	2½	CE8	Concrete Design II.....	2½
*CE9	Structural Design I....	2½	CE10	Structural Design II....	2½
		7½			7½

* Credit not allowed until completion of second semester.

ELECTRICAL ENGINEERING**Leading to the Degree of Associate in Engineering**

The Electrical Engineering profession affords a wide diversification of employment opportunities. The Electrical industry and the general field of Electrical Engineering are generally divided into two main branches, one having to do with electrical power and the other, electronics and communications. The power group deals principally with larger equipment and apparatus employing heavy currents; the communications group involves more delicate equipment with smaller current values. Electrical Engineering thus includes the generation, transmission and distribution of electrical energy for light and power purposes, the application of d-c and a-c machinery to industry, and the operation of all types of electrical equipment, including telephone, radio and electronic apparatus.

This course of study provides a good theoretical background with practical applications. Instruction is carefully planned and the time is divided among lecture, laboratory testing, homework and reports.

FIRST YEAR					
First Semester			Second Semester		
<i>Course No.</i>	<i>Course</i>	<i>Class Hours</i>	<i>Course No.</i>	<i>Course</i>	<i>Class Hours</i>
M1	Algebra.....	2½	M2	Trigonometry.....	2½
*D1	Engineering Drawing ...	2½	D2	Engineering Drawing....	2½
*P1	Physics I	2½	P2	Physics II.....	2½
		<u>7½</u>			<u>* 7½</u>
SECOND YEAR					
M3	Analytical Geometry }	2½	M6	Integral Calculus.....	2½
M5	Differential Calculus }		EE2	A-C Theory.....	2½
EE1	D-C Theory.....	2½	ME2	Applied Mechanics II...	2½
*ME1	Applied Mechanics I....	2½			
		<u>7½</u>			<u>7½</u>
THIRD YEAR					
*ME3	Strength of Materials....	2½	ME4	Strength of Materials....	2½
EE5	D-C Machinery.....	2½	EE6	A-C Machinery.....	2½
EL1	D-C Machinery Lab....	2½	EL2	A-C Machinery Lab. I .	2½
		<u>7½</u>			<u>7½</u>
FOURTH YEAR					
EE7	Electronics for Industry..	2½	EE8	Transmission Theory	2½
*ME5	Heat Engineering.....	2½	ME6	Heat Engineering.....	2½
EL3	A-C Machinery Lab. II.	2½	EL4	Electronics for Industry	
			Lab.....	2½	
		<u>7½</u>			<u>7½</u>

*No credit allowed until completion of second semester.

ELECTRONIC ENGINEERING

Leading to the Degree of Associate in Engineering

This course is designed to train students for the various branches of the field of Electronics. The new advancements in the fields of radio, television, radar and sonar created by the urgencies of war have opened up greater opportunities for intellectual pioneering in these fields of engineering than in other branches of the profession.

Since electron tubes and circuits function around the principles of Electricity, this subject is adequately treated in the second year of the course. After a thorough study of the various types of electron tubes and their basic circuits in the third year, the fourth year is devoted to the various important fields that the student may wish to enter, such as Industrial Electronics, Communications, Broadcast Stations, and the new fields of Frequency Modulation and Television.

The whole course is a good balance between theory and practice, and experiments involving electron tubes and their applications are used through the entire last two years of the course. Laboratory reports and homework problems are used to supplement the experiments and lectures so that the student will absorb the material in a thorough manner.

FIRST YEAR					
Course No.	First Semester	Class Hours	Course No.	Second Semester	Class Hours
	Course			Course	
M1	Algebra.....	2½	M2	Trigonometry.....	2½
*D1	Engineering Drawing....	2½	D2	Engineering Drawing....	2½
*P1	Physics I.....	2½	P2	Physics II.....	2½
		7½			7½
SECOND YEAR					
M3	Analytical Geometry }	2½	M6	Integral Calculus.....	2½
M5	Differential Calculus }		EE2	A-C Theory.....	2½
EE1	D-C Theory.....	2½	EE4	Electrical Machinery....	2½
P3	Electronic Physics.....	2½			
		7½			7½
THIRD YEAR					
**EE11	Electron Tubes and	5	**EE12	Electron Tubes and	5
	Circuits I.....			Circuits II.....	
EE9	Electrical Measurements.	2½	EL6	Electronic Lab.....	2½
		7½			7½
FOURTH YEAR					
EE13	Radio Receivers.....	2½	**EE14	Frequency Modulation	5
EE15	Radio Transmitters....	2½		and Television.....	
†EL7	Advanced Electronic	2½	†EL8	Advanced Electronic	2½
	Lab. I.....			Lab. II.....	
†EE17	Industrial Electronics....	2½	†EL9	Industrial ElectronicsLab.	2½
		7½			7½

*No credit allowed until completion of second semester.

**Two nights per week.

†Students elect one of these two courses.

INDUSTRIAL ENGINEERING**Leading to the Degree of Associate in Engineering**

Meeting the tremendous production requirements of World War II has called for every economy of time in man and machine hours to produce the maximum output. The scientific approach to the problems of industrial management has created an increasing demand for those trained in engineering and in the fundamentals of industrial management to assume administrative responsibility.

The competition of the postwar period will require continued emphasis on this phase of management and provide many opportunities for trained personnel in methods engineering, time study, production planning and control and other phases of industrial relations pertaining to men and machines.

FIRST YEAR					
First Semester			Second Semester		
<i>Course No.</i>	<i>Course</i>	<i>Class Hours</i>	<i>Course No.</i>	<i>Course</i>	<i>Class Hours</i>
M1	Algebra	2½	M2	Trigonometry	2½
*D1	Engineering Drawing . . .	2½	D2	Engineering Drawing . . .	2½
*P1	Physics I	2½	P2	Physics II	2½
		7½			7½
SECOND YEAR					
M3	Analytical Geometry } . .	2½	M6	Integral Calculus	2½
M5	Differential Calculus } . .	2½	ME2	Applied Mechanics	2½
*ME1	Applied Mechanics	2½	IE2	Work Simplification . . .	2½
IE1	Job Evaluation and Merit Rating	2½			
		7½			7½
THIRD YEAR					
*ME3	Strength of Materials . . .	2½	ME4	Strength of Materials . . .	2½
*MD1	Machine Drawing	2½	MD2	Machine Drawing	2½
IE3	Time Study	2½	IE4	Production Planning and Control	2½
		7½			7½
FOURTH YEAR					
*ME9	Machine Design	2½	ME10	Machine Design	2½
*ME5	Heat Engineering	2½	ME6	Heat Engineering	2½
**	Engineering Elective . . .	2½		Engineering Elective . . .	2½
		7½			7½

*No credit allowed until completion of second semester.

*The electives available are Concrete Design, DC-AC Theory, General Chemistry Lecture, Hydraulics, Mechanism, Structural Analysis, Structural Drawing, Surveying, and Transportation Engineering.

MECHANICAL ENGINEERING**Leading to the Degree of Associate in Engineering**

The field of mechanical engineering is concerned with the harnessing of our power resources by means of machinery to form useful work. In contrast to the civil engineer who deals primarily with static forces, the mechanical engineer is more concerned with the mechanics of motion or kinetics. And because moving parts require constant care and adjustment, the mechanical engineer has the task not only of designing and installing complicated machinery, but also of operating it efficiently after it has been installed.

Among the major branches of mechanical engineering are included power, production engineering, machine and machine-tool design, railway mechanical engineering, automotive engineering, aeronautical engineering, refrigerating engineering, air conditioning engineering, and the numerous mechanical problems related to modern industrial operation.

This program of study is designed to give the student considerable training in the principles of mechanical engineering and equip him for advancement in the many subdivisions of this branch of engineering.

FIRST YEAR					
First Semester			Second Semester		
<i>Course No.</i>	<i>Course</i>	<i>Class Hours</i>	<i>Course No.</i>	<i>Course</i>	<i>Class Hours</i>
M1	Algebra.....	2½	M2	Trigonometry.....	2½
*D1	Engineering Drawing....	2½	D2	Engineering Drawing....	2½
*P1	Physics I.....	2½	P2	Physics II.....	2½
		7½			7½
SECOND YEAR					
M3	Analytical Geometry }	2½	M6	Integral Calculus.....	2½
M5	Differential Calculus }		MD2	Machine Drawing.....	2½
*MD1	Machine Drawing.....	2½	ME2	Applied Mechanics.....	2½
*ME1	Applied Mechanics.....	2½			
		7½			7½
THIRD YEAR					
*ME3	Strength of Materials....	2½	ME4	Strength of Materials....	2½
ME7	Mechanism.....	2½	CE4	Hydraulics.....	2½
*ME5	Heat Engineering.....	2½	ME6	Heat Engineering.....	2½
		7½			7½
FOURTH YEAR					
*ME9	Machine Design.....	2½	ME10	Machine Design.....	2½
*ME11	Mechanical Engineering Laboratory.....	2½	ME12	Mechanical Engineering Laboratory.....	2½
**	Engineering Elective....	2½		Engineering Elective....	2½
		7½			7½

*No credit allowed until completion of second semester.

**The electives available are Concrete Design, DC-AC Theory, General Chemistry Lecture, Structural Analysis, Structural Drawing, Surveying, and Transportation Engineering.

PROGRAM LEADING TO DEGREE OF BACHELOR OF BUSINESS ADMINISTRATION IN ENGINEERING AND MANAGEMENT

THE LINCOLN TECHNICAL INSTITUTE in conjunction with the Evening School of Business, Northeastern University, offers a six-year program leading to the degree of Bachelor of Business Administration in Engineering and Management. Upon completion of the engineering requirements of sixty semester hours, the candidate will complete in management courses a total of thirty semester hours plus *Business Readings. It is possible to arrange a plan whereby the two programs may be taken concurrently.

Degree Program	Semester Hours
<i>Lincoln Technical Institute:</i>	
The equivalent of twelve approved full courses in engineering comprising any of the curricula listed on pages 29 to 34.	60
<i>School of Business:</i>	
Courses required of all degree candidates:	
Business Economics	5
Managerial Accounting (Industrial Accounting for students pursuing Production Option)	5
Business Law I, II, III	<u>7½</u>
Elective courses chosen from one of the Options outlined below	<u>12½</u>
Total	30
*Business Readings	5
**Occupational Experience	<u>30</u>
Total Semester Hours Required for Degree	125

Options

TECHNICAL SALES

†Principles Selling	2½
†Sales Management	2½
†Market Research	2½
†Marketing	5
Principles Advertising	2½
Economic Geography	2½
Foreign Trade	5
Business English	5

ADMINISTRATIVE

Office Organization	2½
Credits	2½
Purchasing	2½
†Personnel Administration	5
Government Controls	2½
†Business English	5
Management Small Business	2½

PRODUCTION

†Work Simplification I	2½
†Time Study I	2½
†Job Analysis	2½
†Production Control	2½
Quality Control	2½
Materials Handling	2½
Plant Layout	2½
Manufacturing Processes	5
Production Estimating	5

PRE-GRADUATE PROGRAM

†Marketing	5
†Labor-Management Relations	2½
†Production Control	2½
†Financial Organization	5
†Statistics	2½

*The Business Readings is not a classroom course, but is designed to broaden the student's acquaintance with selected readings in the field of business management. Courses of equal semester hours credit (five semester hours) may be substituted for Business Readings.

**Occupational Experience is awarded to a maximum of ten semester hours for each of the last three years. The award is based on the nature and quality of the student's occupation during this period.

†Recommended Electives.

ALPHABETICAL LIST OF SUBJECTS IN ALL CURRICULA

(All classes are held 7:00 to 9:30 P.M. unless otherwise stated)

<i>Course No.</i>	<i>Subject</i>	<i>Semester Given</i>	<i>Day</i>
EL7	Advanced Electronic Laboratory I.....	1	Wednesday
EL8	Advanced Electronic Laboratory II.....	2	Wednesday
M1	Algebra.....	1, B, S	Monday
EE6	Alternating-Current Machinery.....	2	Wednesday
EL2	Alternating-Current Machinery Laboratory I.....	2	Thursday
EL3	Alternating-Current Machinery Laboratory II.....	1	Monday
EE2	Alternating-Current Theory.....	2	Wednesday
*M3	Analytical Geometry.....	1	Monday
ME1	Applied Mechanics I.....	1	Friday
ME2	Applied Mechanics II.....	2	Friday
CE7	Concrete Design I.....	1	Thursday
CE8	Concrete Design II.....	2	Thursday
*M5	Differential Calculus.....	1	Monday
EE5	Direct-Current Machinery.....	1	Wednesday
EL1	Direct-Current Machinery Laboratory..	1	Thursday
EE1	Direct-Current Theory.....	1	Wednesday
EE4	Electrical Machinery.....	2	Friday
EE9	Electrical Measurements.....	1	Wednesday
EE11	Electron Tubes and Circuits I.....	1	Monday and Friday
EE12	Electron Tubes and Circuits II.....	2	Monday and Friday
EL6	Electronic Laboratory.....	2	Wednesday
P3	Electronic Physics.....	1	Friday
EE7	Electronics for Industry.....	1	Friday
EL4	Electronics for Industry Laboratory...	2	Monday
D1	Engineering Drawing I.....	1, B, S	Wednesday
D2	Engineering Drawing II.....	2, 3, S	Wednesday
EE14	Frequency Modulation and Television..	2	Monday and Friday
Ch1	General Chemistry I.....	1	Wednesday
Ch2	General Chemistry II.....	2	Wednesday
ChL1	General Chemistry Laboratory I.....	1	Friday (6.30-9.30)
ChL2	General Chemistry Laboratory II.....	2	Friday (6.30-9.30)
ME5	Heat Engineering I.....	1	Wednesday
ME6	Heat Engineering II.....	2	Wednesday
CE4	Hydraulics.....	2	Friday
EE17	Industrial Electronics.....	1	Wednesday
EL9	Industrial Electronics Laboratory.....	2	Wednesday
M6	Integral Calculus.....	2	Monday
IE1	Job Analysis and Evaluation.....	1	Wednesday (7-9)
ME9	Machine Design I.....	1	Monday or Thursday
ME10	Machine Design II.....	2	Monday or Thursday
MD1	Machine Drawing I.....	1	Wednesday
MD2	Machine Drawing II.....	2	Wednesday
ME11	Mechanical Engineering Laboratory I..	1	Monday or Thursday
ME12	Mechanical Engineering Laboratory II..	2	Monday or Thursday
ME7	Mechanism.....	1	Friday
Ch5	Organic Chemistry I.....	1	Monday
Ch6	Organic Chemistry II.....	2	Monday
ChL5	Organic Chemistry Laboratory I.....	1	Friday (6.30-9.30)
ChL6	Organic Chemistry Laboratory II.....	2	Friday (6.30-9.30)
Ch7	Physical Chemistry I.....	1	Wednesday
Ch8	Physical Chemistry II.....	2	Wednesday
P1	Physics I.....	1, S	Friday
P2	Physics II.....	2, S	Friday
IE4	Production Planning and Control.....	2	Thursday (7-9)
Ch3	Qualitative Chemistry.....	1	Wednesday

<i>Course No.</i>	<i>Subject</i>	<i>Semester Given</i>	<i>Day</i>
ChL3	Qualitative Chemistry Laboratory	1	Monday (6.30-9.30)
Ch4	Quantitative Chemistry	2	Wednesday
ChL4	Quantitative Chemistry Laboratory	2	Monday (6.30-9.30)
EE13	Radio Receivers	1	Monday
EE15	Radio Transmitters	1	Friday
ME3	Strength of Materials I	1	Monday
ME4	Strength of Materials II	2	Monday
CE5	Structural Analysis I	1	Friday
CE6	Structural Analysis II	2	Friday
CE9	Structural Design I	1	Monday
CE10	Structural Design II	2	Monday
CD1	Structural Drawing I	1	Wednesday
CD2	Structural Drawing II	2	Wednesday
	Sub-Freshman Mathematics	1	Tuesday and Friday (7-10)
CE1	Surveying I	1	Thursday
CE2	Surveying II	2	Thursday
IE3	Time Study	1	Wednesday or Friday (7-9)
EE8	Transmission and Distribution Theory	2	Friday
CE3	Transportation Engineering	1	Friday
M2	Trigonometry	2, 3, S	Monday
IE2	Work Simplification	2	Tuesday or Thursday (7-9)

1 = First Semester; 2 = Second Semester; B = Division B (Jan. 2, 1951); 3 = Repeated for Division B about March 15; S = Summer Term.

* Analytical Geometry and Differential Calculus are given as one course.

ENGINEERING LABORATORY EQUIPMENT

CIVIL ENGINEERING LABORATORIES

A considerable amount of demonstration equipment including many models is available for use in the study of structures, hydraulics, sanitary engineering, highways, concrete and soil mechanics.

Surveying

The Department of Civil Engineering is provided with a variety of excellent and up-to-date equipment for field work. The instruments have been chosen to make possible the working out of advanced as well as elementary field problems, and to acquaint the students with the principal makes and types of instruments in general use.

Hydraulics and Sanitary Engineering

This laboratory, located on the first floor of the Botolph Building, is equipped with demonstration measuring devices for use in connection with the courses in hydraulics.

Complete equipment is also provided for studies of water softening, filtration, coagulation, analysis of water and sewage by the photometer, and analysis of bacterial condition of water and sewage. Specialized equipment for advanced courses in sanitary research is also available.

Concrete and Highway Engineering

Located on the first floor of the Botolph Building, this laboratory is equipped for conducting all the routine tests on cement and aggregate. The 300,000 lb. Riehle testing machine as well as the other testing machinery in the Mechanical Engineering Department are available for compression tests on concrete cylinders. Considerable equipment is available for conducting research work.

Equipment is also available for conducting a major portion of the accepted tests on bituminous materials and aggregates as used in highway work. Soil Mechanics equipment consists of a general soil sampler, consolidometer, wet-mechanical gram-size analysis and a quicksand demonstration tank.

Aerial Photogrammetry

The apparatus in this laboratory may be used to instruct the students in the basic principles of photogrammetry, or may be used

to instruct the students in the more technical phases of photogrammetry such as horizontal control, vertical control, stereoscopic plotting, mechanical triangulation, and the tri-metrogon method of plotting.

CHEMICAL LABORATORIES

For experiments and investigations in Chemistry there are available three laboratories with the following equipment:

Analytical Chemistry

The laboratory for Analytical Chemistry is fully equipped for giving instruction in the usual undergraduate courses. Each student is supplied with the necessary laboratory glassware, porcelain, and the standard pieces of hardware. Special equipment of all needed types is available.

An adjoining balance room is equipped with balances suitable for quantitative analytical work.

Industrial Chemistry

This laboratory is equipped with high pressure steam, vacuum, and the facilities usually found in a chemical laboratory. The various instruments and other chemical equipment necessary for the examination, testing, and analysis of the raw materials, intermediate and final products of the various industries are at hand.

The electrical equipment includes a Kimley electro-analysis machine for the determination of copper, lead, nickel, and zinc; a Hevi-duty electric furnace for use in ignition and combustion work; and a Freas drying oven capable of adjustment for various temperatures. Power is available in a variety of D-C and A-C voltages.

Inorganic Chemistry

In the locker assigned to each student for his individual use are the articles needed more or less continually by him as he does his experiments in the laboratory sessions. He has a liberal supply of glass, porcelain, metal and other articles. Additional pieces of apparatus are issued from the stockroom or otherwise made available for use in particular experiments where they are needed.

The laboratories are equipped with general facilities appropriate to this course, such as gas, electricity, cold and hot water, fume hoods.

Organic Chemistry

The needed equipment is available. There are individual lockers and apparatus, fume hoods for general use, and special equipment, as required.

Drying operations are carried out with the aid of a steam-heated drying chamber and electrically heated drying oven. Steam lines on the benches supply the steam for steam distillations, eliminating the necessity of individual steam generators.

ELECTRICAL ENGINEERING LABORATORIES

The Electrical Engineering laboratories are located in the Botolph Building. Four laboratories are included in this unit: Dynamo; Measurements; Industrial Electronics; and Electronics, Communications, and High Frequency.

Dynamo

This laboratory is provided with both 60 cycle three-phase 230 volt alternating current and 115-230 volt three-wire direct current. The equipment includes more than sixty motors and generators of different types together with the necessary auxiliary equipment to operate and test them. The motors and generators have been selected so as to reduce as much as possible the risk from high voltage while making available to the students a representative range of commercial apparatus.

Electrical Measurements

The equipment here is of two distinct types: first, that planned primarily for teaching principles of measurement, and secondly, that which is used in teaching advanced standardizing methods as well as for calibrating instruments in other laboratories of the University. Briefly, this laboratory is equipped for practically any work in electrical measurements except for the absolute determinations carried on in national standardizing laboratories.

Industrial Electronics Laboratory

This laboratory is designed to offer experiments in the application of electronic tubes and circuits to industry. In addition to basic electronic control circuits, there are larger pieces of equipment, including the control of d-c generator voltage, d-c motor speed control, welding control, Thyatron and Ignitron rectifiers, electronic synchronization of a-c sources, and induction heating.

Electronic, Communications, and High-Frequency Laboratory

This laboratory is equipped with apparatus to demonstrate and test the many ramifications of electronic equipment used in low, audio, radio-frequency and higher frequency circuits. Available are many electronic instruments, including vacuum-tube voltmeters, cathode-ray oscilloscopes, audio and radio-frequency oscillators, wave-analyzers, pulse generators and equipment operating at radar frequencies, as well as many other types used in telephone, radio, and television communication circuits.

ELECTRONIC ENGINEERING LABORATORIES

The Electronics laboratories are located in Richards Hall and the Botolph Building.

Electron Tubes and Circuits

Equipment is available to study the operating of all types of electron tubes that are normally used, extending from diodes through to beam tubes, gas triodes, photocells, cathode ray tubes, and the various rectifier, amplifier and other basic circuits used with them, including vacuum tube voltmeters, regulated power supplies, resistance coupled amplifiers, inverse feedback amplifiers, etc.

Electronics and Communications

These laboratories are equipped with modern apparatus for work in the fields of electronics, networks, radio engineering, ultra-high frequency techniques and industrial electronics. The equipment includes Westinghouse Ignitron Rectifier, Industrial X-Ray Equipment, Motor Control Unit and equipment on Induction and Dielectric Heating.

Industrial Electronics

Equipment available for this course includes photocell and time delay relays, motor controls, cathode ray oscilloscopes, grid controlled rectifiers, oscillators, induction and dielectric heating equipment, and welding control equipment.

Communication Engineering

Equipment available for this course includes crystal oscillators, radio frequency amplifiers, frequency doublers, plate and grid modulation units, complete transmitters, radio frequency trans-

mission lines. The frequency modulation apparatus includes balanced modulators, reactance modulators, phase modulators, discriminators, limiters, networks, antenna units, and complete receivers.

Apparatus for television includes sweep oscillators and amplifiers, synchronizing circuits, video amplifiers, multivibrators, counters, clipping, shaping and D-C insertion circuits, and television receiving equipment. A complete rack of Television Test Equipment is available. This includes a Sweep generator, Marker generator, Oscilloscope, Volt-ohmyst, etc.

In the newer fields such as Industrial Electronics and Television, equipment is added from time to time as practical experiments are developed.

INDUSTRIAL ENGINEERING LABORATORY

The Industrial Engineering Laboratory is located in the Greenleaf Building and is devoted exclusively to methods engineering and time study analysis. This laboratory is completely equipped with the latest facilities and tools used by industrial engineers. Besides the general equipment consisting of benches, tables, lathes, jigs, fixtures, and racks, the laboratory has an ample supply of time study boards, stop watches and timers for time study work. There is also available complete motion picture equipment and microchronometers for micromotion work.

Students in the Department of Industrial Engineering also share in the use of the Mechanical Engineering Laboratories.

MECHANICAL ENGINEERING LABORATORIES

The Mechanical Engineering Department has a well-equipped laboratory, containing a large variety of modern machines and occupying over 10,000 square feet of floor space in the basement of Richards Hall. Special areas have been set aside and equipped for oil testing, mechanics research, and similar purposes. Auxiliary equipment is, of course, available for making all the usual tests and measurements.

Steam Power

This equipment includes a wide variety of steam engines, turbines, pumps, heat exchangers, and measuring instruments.

Testing Materials and Heat Treatment

For tension, compression, bending, and shearing tests, the laboratory is equipped with a 300,000 lb. capacity Riehle, a 200,000 lb. and a 50,000 lb. capacity Olsen, as well as several smaller testing machines. For other tests the laboratory has torsional testing machines, impact testers, fatigue testers, hardness testers, extensometers, oil testing equipment, calorimeters, as well as instruments for measuring speed vibration, temperatures, pressures and flow of fluids.

For heat treatment studies, an electric furnace and a gas-fired furnace are available. Equipment magnifying up to 2600 diameters is available for photographing crystalline structures, and the laboratory has polaroid equipment for photoelastic stress analysis.

Machine Shop

Adjoining the laboratory is a machine shop fully equipped with machine tools, welding equipment, and a small forge.

Internal Combustion and Aeronautics

The internal combustion equipment includes a number of gas and oil, automobile, airplane, and Diesel engines. Most of these are set up for running experimental tests, but several are available for dismantling and demonstration purposes.

An open circuit Venturi type wind tunnel having a three-foot throat and capable of 120 miles per hour wind velocity is available for experimental and demonstration work in the measurement of air forces on model planes and other structures. The tunnel is equipped with three component hydraulic balances having variable degrees of sensitivity.

In addition to the above equipment, there is an oil-fired steam boiler, hot-air furnace, unit heater, air conditioning units, centrifugal fan and several weirs for measuring water flow.

Metallography tests with microscopes and photographic apparatus may be performed.

DESIGN AND DRAFTING ROOMS

The School possesses large, light, and well-equipped drawing rooms for the carrying on of the designing and drafting which form so important a part of engineering work. These rooms are supplied with individual drawing tables and stools. Drafting room black-

boards are equipped with traveling straightedge devices which facilitate speed and accuracy in blackboard demonstrations.

PHYSICS DEPARTMENT

The Physics equipment has been carefully selected and is ample for demonstrating physical principles. The following apparatus is available for this purpose:

Motor driven Hyvac pump, mechanical oscillator, elasticity apparatus; Joly balance; barometers; pulleys; specific gravity bottles; torsion balance; eight-foot slide rule; wave apparatus; spherometers; organ pipes; tuning forks; Hartl optical disk; arc illuminator; projection lantern; refraction apparatus; metronome; lenses; calorimeters; hydrometers; thermometers; burners; apparatus for measuring latent heat, specific heat, expansion and mechanical equivalent of heat; optical bench and supplies; diffraction grating; spectrosopes; rheostats; galvanometers; magnets; electrostatic apparatus; electroscope; Wimshurst machine; induction coil; ammeters; voltmeters; resistance boxes; condensers; Wheatstone bridges; thermocouples; cathode ray oscilloscope; electronic switch; demonstration table equipped with water, compressed air, exhaust hood, 110 volts D.C., 110 volts A.C., and 220 volts A.C.

DESCRIPTION OF COURSES

THE LINCOLN TECHNICAL INSTITUTE reserves the right to withdraw, modify, or add to the courses offered or to change the order or content of courses in any curriculum.

The Lincoln Technical Institute further reserves the right to change the requirements for graduation, tuition and fees charged, and other regulations. However, no change in tuition and fees at any time shall become effective until the school year following that in which it is announced.

Any changes which may be made from time to time pursuant to the above policy shall be applicable to all students in the school, college, or department concerned, including former students who may re-enroll.

CHEMISTRY

Ch 1-2 General Chemistry

This course will instruct in the fundamental ideas of matter and energy; properties of gases, liquids, and solids; molecular weights; theory of valence; classification of the elements; ionic reactions; chemistry of metals and non-metals; electrochemistry; the solution of all types of problems to illustrate practical applications; introduction to organic chemistry including industrial applications to petroleum, rubber, synthetic resins, plastics; chemotherapy; laboratory experiments demonstrating the principles discussed in class.

5 semester hours credit

ChL 1-2 General Chemistry Laboratory

This course consists of a series of laboratory experiments operated in conformance with the lecture course in General Chemistry (Ch 1-2).

6 semester hours credit

Ch 3 Qualitative Chemistry

The object of this course is not only to give instruction in analytical procedure and technique, but also to give the student a knowledge of the application of the fundamental concepts of solutions to the laboratory work. A portion of the time is devoted to the formulation of numerical terms which are essential to the understanding of the mass action law, ionic equilibria, solubility product, hydrolysis, and redox constants.

(Prerequisite, Ch 1-2)

2½ semester hours credit

ChL 3 Qualitative Analysis Laboratory

This course applies the material covered in Ch 3 to actual problems. After some preliminary experiments, certain procedures are combined and the separations and identifications made on both known and unknown solutions. Finally, these are combined into a complete, systematic scheme

which is applied to artificially prepared mixtures and industrial materials. Careful manipulations, thoroughness in observation, and accuracy in arriving at conclusions are expected of each student.

(Prerequisite, Ch L 1-2)

3 semester hours credit

Ch 4 Quantitative Chemistry

It is the purpose of this course to give to the student a realization of the scientific development of quantitative methods. Each of the major operations such as weighing, measurement of volumes, titration, filtration, ignition, and combustion, is considered from the standpoint of the theoretical principles involved, and with due consideration of the manipulative technique necessary.

This is followed by the combination of these operations and their application to actual analysis, including a comprehensive study of volumetric methods and of the more elementary parts of gravimetric analysis.

As the correct calculation of analytical results is of no less importance than the actual procedures of analysis, a number of problems forms a very important part of the course.

(Prerequisite, Ch 3)

2½ semester hours credit

ChL 4 Quantitative Analysis Laboratory

This is a laboratory course intended to illustrate by actual use the various analytical methods considered in Ch 4. After certain preliminary experiments designed to acquaint the student with the apparatus used, volumetric analysis, including acidimetry and alkalimetry, oxidation, reduction, and precipitation methods are taken up. This is followed by simple gravimetric analyses.

(Prerequisite, Ch L 3)

3 semester hours credit

Ch 5-6 Organic Chemistry

The first half of the year is devoted to a study of the properties, methods of preparation, chemical reactions and interrelations of the aliphatic carbon compounds. The hydrocarbons and their oxygen, halogen, sulfur, and nitrogen containing derivatives. An elementary consideration of reaction mechanisms and the effects of structure on reactivity. Industrial applications are discussed.

In the second half of the year the course considers the properties, methods of preparation and reactions of the various classes of aromatic compounds. Dyes, heterocyclic compounds, high polymers — natural and synthetic — and certain compounds of biological importance are considered. Reaction mechanisms and industrial significance are discussed.

(Prerequisite, Ch 1-2)

5 semester hours credit

ChL 5-6 Organic Chemistry Laboratory

This course is co-ordinated with the lecture course and deals with the preparations and reactions of the aliphatic and aromatic compounds.

6 semester hours credit

Ch 7-8 Physical Chemistry

This course covers the fundamentals of physical chemistry. The topics discussed include the three states of matter, the solution laws, surface

phenomena and colloids, thermochemistry, chemical equilibrium, ionic equilibrium, electrochemical cells and electrolysis, kinetics of chemical reactions, atomic and molecular structure, and radioactivity. Practical applications of these fundamentals are discussed whenever possible.

(Prerequisite, Ch 4)

5 semester hours credit

CIVIL ENGINEERING

CE 1 Surveying I

A course of lectures which treats the basic principles, such as taping, compass, theory and use of the transit as applied to both random and closed traverses, differential leveling, profile leveling, and double-rod leveling. The D.M.D. and rectangular co-ordinate methods (of computing, plotting and running traverses) are stressed and especially as they may apply to such work or procedure as outlined by the Massachusetts Land Court.

The theory and use of the plane table (including the intersection problem, the resection problem, and three point problem) is also studied.

(Prerequisite, M 1-2)

2½ semester hours credit

CE 2 Surveying II

A course of lectures and problems on simple curves (railroad curves and circular arcs), vertical curves, compound curves and Stadia surveying. The method of obtaining cross-sectional areas is taught. The student is instructed in the preparation of earthwork tables and the solution of the mass diagram and elementary problems.

(Prerequisite, CE 1)

2½ semester hours credit

CE 3 Transportation Engineering

This course consists principally of a discussion of modern highway engineering practices. The general features of routing, such as horizontal and vertical curves, rates of grade, superelevation, and traffic control are studied both from the viewpoint of safety and economics. Materials and tests of materials used in the construction of both highway and airport projects are discussed. Drainage problems and frost-action in subgrades are included in this discussion. The major portion of the course is spent on the construction procedure of the several types of roadways. These consist of the low-cost types such as stabilized soils, gravel, and crushed stone. The higher-cost types of roadways such as penetrated macadam, Portland Cement concrete, brick pavements, and asphaltic concrete are included. A brief discussion of airport design and layout concludes the course.

The application of the latest research development is considered throughout the entire course.

2½ semester hours credit

CE 4 Hydraulics

This course is a study of the principles of both hydrostatics and hydrodynamics. The subjects considered are the pressure on submerged areas together with their points of application; the laws governing the flow of fluids through orifices, short tubes, nozzles, weirs, pipe lines, and open channels; Reynolds numbers; and viscosity.

(Prerequisite, ME 1-2)

2½ semester hours credit

CE 5-6 Structural Analysis

First term in this theory course covers the equilibrium of forces and structures by analytical and graphical methods. Shear and moment diagrams are reviewed and expanded. Analytical and graphical analysis of roof trusses and mill building frames are worked out. The use of influence lines in analyzing stresses in beams, girders, and trusses is discussed as well as absolute maximum moment in beams.

The work in the second term consists of analyzing the stresses in various types of railroad and highway bridge trusses by means of move-up load method and equivalent uniform loadings. Counters and lateral forces on the trusses are discussed. Deflections of beams and trusses by method of work (dummy load) and moment-area method are studied. The course closes with an introduction to the slope and deflection method as well as moment distribution method of analyzing statically indeterminate beam and portal problems.

(Prerequisite, ME 3-4)

5 semester hours credit

CE 7-8 Concrete Design

A consideration of the theoretical and practical principles involved in the design of concrete and reinforced concrete structures. The following subjects are thoroughly discussed: the manufacture of Portland Cement; the specification requirements for fine and coarse aggregates; the design and analysis of reinforced rectangular beams, beams reinforced for compression, and "T" beams using both Tabular design and the Transformed Area methods. The principles involved in web reinforcement for diagonal tension as well as bond and shear stresses are discussed and problems worked out. Consideration is given to the interpretation of the Joint Committee Report on Recommended Practice and Standard Specifications for Concrete and Reinforced Concrete as well as the American Concrete Institute Building Code Requirements.

The second part of this course consists of the design and detailing of an interior bay of a building using one-way slabs, T-beams, and continuous girders. Composite beams and the various types of columns with both axial and eccentric heads as well as isolated and combined footings, both on soil and piles, are discussed and design problems worked out. The course concludes with a discussion and the design of retaining walls of the cantilever type.

(Prerequisite, ME 3-4)

5 semester hours credit

CE 9-10 Structural Design

This course consists of a study of the design of such structural units as steel beams, girders, columns, trusses, riveted connection and steel frames as a whole. Particular attention is given to the practical phases of construction and their relation to design. The design of structural timber is also studied. In the first half of the year the student is given many problems which he works out at home and in class and the last half of the year is usually devoted to the design and detailing of some larger, more complicated structures or portions of structures such as a plate girder highway bridge.

(Prerequisite, CD 1-2 and ME 3-4)

5 semester hours credit

CD 1-2 Structural Drawing

The course in Structural Drawing consists of making shop drawings of the various members of modern steel frames. After making drawings of structural sections and standard connections, the student is given data from which he makes framing plans and shop details using both riveted and welded construction. The problems usually covered are portions of a steel frame building, a bridge girder, and a roof truss.

(Prerequisite, D 1-2)

5 semester hours credit

ELECTRICAL ENGINEERING**EE 1 Direct-Current Theory**

This course is designed to give the student the required understanding of direct-current fundamental circuit theory. It deals with such concepts as electromotive force, current flow, resistance, conductance, circular mil, Ohm's law, series and parallel d-c circuits, d-c power and energy, primary and secondary cells, Kirchoff's laws, Superposition and Thévenin's Theorems, d-c instruments, magnetic and electrostatic circuits.

(Prerequisite, M1-2)

2½ semester hours credit

EE 2 Alternating-Current Theory

In this course lectures and problems are presented dealing with fundamental alternating-current circuit theory. Involved are sinusoidal electromotive forces and currents, effective value, power and energy, power factor, complex and polar notations, a-c series and parallel circuits, resonant conditions, and elementary polyphase systems.

(Prerequisite, EE 1)

2½ semester hours credit

EE 4 Electrical Machinery

This course is designed to introduce to the electronic student the elements of operation and control of rotating electrical machinery encountered in practice in connection with electronic control devices.

A study will be made of the shunt, series and compound d-c motors and generators with special emphasis placed on their principles of operation, characteristics, and methods of speed or voltage control. Also involved will be the a-c induction motor, both single-phase and three-phase, as well as elementary alternator theory; together with a consideration of the synchronous motor.

A study of the Amplidyne generator and other special devices used with electronic control circuits will also be made.

(Prerequisite, EE 1, EE 2)

2½ semester hours credit

EE 5 Direct-Current Machinery

This course involves the principles of operation and testing methods of d-c machinery. It includes the consideration of shunt, series, and compound motors and generators, with emphasis on problems of commutation, armature reaction, losses, efficiencies, stray power, ratings, methods of test as well as auxiliary equipment such as protective devices. The application of d-c machinery to industry is also involved.

(Prerequisite, EE 1)

2½ semester hours credit

EE 6 Alternating-Current Machinery

This course involves the theory of single-phase and polyphase transformers, as well as a-c machinery. Construction and principles of operation of the constant potential, constant current, autotransformer, and other types of transformers are considered with emphasis on the vector diagrams, core losses and methods of test. Attention is also given to the principles of operation of the a-c induction motor, synchronous motor and alternator. The theory of operation, characteristics, load conditions and methods of testing are considered in detail.

(Prerequisite, EE2)

2½ semester hours credit

EE 7 Electronics for Industry

This course deals with the basic electron tubes, especially those used in industry for control purposes, as well as electronic control and regulation circuits. A study of the high vacuum diode and triode, Thyatron and photo-tube is made as well as amplifier theory, rectification and filtering, and general industrial control circuit applications.

(Prerequisites, EE 2 and EE 5)

2½ semester hours credit

EE 8 Transmission and Distribution Theory

This course is concerned with the problems pertaining to the transmission and distribution of a-c energy at power frequencies. Typical transmission line problems are considered, involving normal and abnormal or fault conditions. The method of symmetrical phase components is used in the solution of certain problems. Also considered is protective and station equipment and trends in the power industry.

(Prerequisite, EE 6)

2½ semester hours credit

EL 1 Direct-Current Machinery Laboratory

This course is designed to apply the information gained from course EE 5. A number of tests are performed on the d-c shunt, series and compound motors as well as tests on the d-c shunt and compound generators. Involved also are experiments on parallel operation of d-c generators, stray power and opposition tests.

(Prerequisite, EE 5)

2½ semester hours credit

EL 2 Alternating-Current Machinery Laboratory I

This course offers laboratory work paralleling the lectures of course EE 6 and includes experiments on a-c power circuits, polyphase circuits and power measurements, constant potential transformer tests, constant current transformer, and synchronous machinery.

(Prerequisite, EE 6)

2½ semester hours credit

EL 3 Alternating-Current Machinery Laboratory II

This course includes tests on the single-phase and three-phase induction motors, the brush-shifting motor, as well as investigation of induction motor windings, and tests on the Amplidyne generator.

(Prerequisite, EE 6)

2½ semester hours credit

EL 4 Electronics for Industry Laboratory

This laboratory course offers an introduction to the subject of the control and regulation of industrial equipment and processes by electronic means. Experiments are performed on the diode, triode, photo-tube and Thyatron as well as the control of motor speed and generator voltage by electronic circuits. Available also are experiments on induction and dielectric heating, Ignitron three-phase rectifier, the Thyatron six-tube rectifier, resistance welding control and automatic synchronization.

(Prerequisite, EE 7)

2½ semester hours credit

ELECTRONIC ENGINEERING**EE 9 Electrical Measurements**

The successful use of modern electronic equipment in the research or development laboratory and in many operational fields requires a knowledge of the equipment and techniques employed in making precise electrical measurements. This course is intended to give the student a thorough understanding of the modern equipment and procedures used in making accurate D-C and A-C measurements of voltage, current, power, resistance, capacitance, inductance, impedance, frequency, tube characteristics, etc. The factors limiting the precision of the results are analyzed. This lecture course provides a sound basis for future laboratory work.

(Prerequisite, M 6, EE 1-2)

2½ semester hours credit

EE 11 Electron Tubes and Circuits I

This course begins with a review of electron theory, then the theory of electron emission, by thermionic, photo-electric, secondary and field means, including the study of the construction and processing of the various types of cathodes. The construction and evacuation of tubes will be discussed. Then the diode tube with the space charge phenomena will be taken up, leading into the control of electrons in vacuum tubes. The static and dynamic characteristics of the various tube types will be covered. Equivalent amplifier circuits will be studied. Rectifier action will be covered and the addition of gas in vacuum tubes and the control of discharges in gas-filled tubes.

Now the analysis of circuits is started. First are rectifier circuits, both single and three phase, including choke and condenser input filters, and electronically regulated power supplies. Then the study of photocells, cathode ray tubes, multi-purpose and special tubes, followed by the vacuum tube as a control device.

(Prerequisite, EE 1-2)

5 semester hours credit

EE 12 Electron Tubes and Circuits II

This course starts with audio frequency amplifiers, first studying the voltage type and later power amplifiers. Included are the following topics: Distortion; Decibels; Input admittance; Resistance and Transformer coupling; D-C amplifiers; Photo-tube amplifiers; Current amplifiers; Volume control methods; Sources of noise; Maximum power output; Plate efficiency; Push-pull amplifiers; Classes A, AB, and B operation; and Feedback amplifiers.

The second half of the course is devoted to Radio frequency amplifiers of both voltage and power type. Included are Class B and C operation and their design; Neutralization; and Frequency multiplication.

(Prerequisite, EE 11)

5 semester hours credit

EE 13 Radio Receivers

This course is designed to give the student a thorough knowledge of radio receiver operation and practice. After briefly covering the early types of radio receivers such as the regenerative and radio frequency circuits the super-heterodyne will be covered, both for broadcast and communications use. Particular attention will be paid to pre-selectors, mixers and convertors, intermediate frequency amplifiers, automatic volume control, and loud speakers. Audio amplifier and rectifier circuits will be reviewed as to use in receivers, as they will have been covered in a previous course. Attention will be given to problems of selectivity, sensitivity, stability and fidelity of receivers.

(Prerequisite, EE 12)

2½ semester hours credit

EE 14 Frequency Modulation and Television

Fundamental theory of frequency modulation will be covered first, then the various methods of obtaining it in the transmitter and the special circuits found in the receiver. Ultra-high-frequency transmission characteristics will also be covered in this course.

The basic principles of various methods of picture transmission such as wire photo, radio photo, facsimile and then television. Review of the mechanical methods used in early television. Electronic television systems, using the iconoscope and image orthicon for transmission, and cathode ray tube for reception. Synchronizing circuits and problems. Video amplifiers, deflecting circuits, television transmitters, receivers and antennas. Problems and technique of transmission of motion pictures and outdoor and studio scenes.

(Prerequisite, EE 13, 15)

5 semester hours credit

EE 15 Radio Transmitters

This course opens with the study of oscillators, including the various feedback circuits, crystal oscillators, parasitic oscillations, and special oscillator circuits. This is followed by a study of modulators, and then complete radio transmitters. The theory is completed with the study of antennas and transmission lines.

(Prerequisite, EE 12)

2½ semester hours credit

EE 17 Industrial Electronics

In this course the use of electron tubes in industrial applications will be studied. Subjects include photocell relays, time delay relays, grid controlled rectifiers, motor control circuits, welding control circuits, Ignitron rectifier circuits, induction and dielectric heating circuits and applications, and the cathode ray oscilloscope in industrial applications.

(Prerequisite, EE 4, EE 12)

2½ semester hours credit

EL 6 Electronic Laboratory

The experiments in this course cover most of the subjects that have been covered by lecture in Electron Tubes and Circuits I and II. They include electron emission, gas diodes, triodes, tetrodes, pentodes, beam power tubes, Thyratrons, half and full wave rectifiers, voltage amplifiers, resistance coupled cascade amplifiers, feedback amplifiers, radio frequency voltage and power amplifiers, photo cells, cathode ray tubes and oscilloscopes.

Laboratory reports are required on each experiment and the class is broken up into small groups so that each student has an adequate chance to participate in the experiment.

(Must be taken concurrently with EE 12)

2½ semester hours credit

EL 7 Advanced Electronic Laboratory I

The experiments in this course cover the theory subjects studied in the Radio Receiver and Transmitter courses. They include intermediate frequency amplifiers, frequency mixers, detectors, distortion in audio amplifiers, complete receivers, frequency multipliers, crystal oscillators, power oscillators, audio oscillators, Class C RF amplifiers, amplitude modulated r-f amplifiers, vacuum tube voltmeters, RF Transmission Lines. RCA Dynamic Demonstrators are used as part of the study of radio receivers.

(Must be taken concurrently with EE 13, 15)

2½ semester hours credit

EL 8 Advanced Electronics Laboratory II

The experiments in this course cover the theory subjects studied in the Frequency Modulation and Television courses. They include Discriminators, Ratio Detectors, Limiters, Reactance Modulators, Balanced Modulators, Networks in FM circuits, Video Amplifiers, Television pulse generators and deflection circuits, frequency dividing circuits, such as counters and multivibrators. A complete television receiver is also studied as well as several typical complete FM units.

(Must be taken concurrently with EE 14, 16)

2½ semester hours credit

EL 9 Industrial Electronics Laboratory

This course includes experiments in all of the subjects listed in the lecture course. Preliminary talks are given on some of the complicated experiments.

(Prerequisite, EE 17)

2½ semester hours credit

INDUSTRIAL ENGINEERING**IE 1 Job Analysis and Evaluation**

Basic principles underlying theory of wage calculation, job elements and their definitions, rating scales, writing job descriptions and specifications, selection of appropriate rating plan, setting up job factors and maximum point values, use of several methods of determining specific point values. Discussion of special cases from individual companies.

2½ semester hours credit

IE 2 Work Simplification

Process and operation analysis through the use of process charts, flow diagrams, operation charts, man-and-machine charts, micromotion study, principles of motion economy. Work place layout, labor-saving tools and equipment, laboratory development work. Elementary time study. Setting up synthetic standards using elemental time values. Wage incentives, problems involved in the introduction of work simplification with particular emphasis upon employee morale. *2½ semester hours credit*

IE 3 Time Study

Introduction to wage incentives and current wage plans. History and development of time study, relation to motion and micromotion study, preliminary observation, technique of making time studies. Rating procedure, development of proper concept of "normal" performance, applying the rating and relaxation factors. Setting job and element standards, use of allowances, treatment of variables, introduction to standard data, synthetic standards, problems in the application of standards. Laboratory practice will supplement the classroom work. *2½ semester hours credit*

IE 4 Production Planning and Control

Factory organization, factory planning and layout, materials handling, storage, maintenance, power. Forecasting and budgeting, planning, scheduling, routing, dispatching, subcontracting. Quantity control, quality control, waste control, priorities, allocations, inventory control, records and reports. *2½ semester hours credit*

MECHANICAL ENGINEERING

ME 1-2 Applied Mechanics

(a) The subjects treated are collinear, parallel, concurrent, and non-concurrent force systems in a plane and in space; the determination of the resultant of such systems by both algebraic and graphical means, special emphasis being placed on the string polygon method for coplanar force systems; the forces required to produce equilibrium in such systems; first moments; and problems involving static friction, such as the inclined plane and the wedge.

(b) A continuation of Applied Mechanics (a) in which the subjects treated are continuation of first moments as applied to varying intensity of force and to the determination of center of gravities of areas and solids; second moments and the application to the determination of moment of inertia of plane and solid figures, radius of gyration, polar moment of inertia; product of inertia. Brief consideration is given to uniform motion, variable accelerated motion, rotation and plane motion.

(Prerequisite, M 2 and P 1)

5 semester hours credit

ME 3-4 Strength of Materials

This course comprises the study of the stresses and strains in bodies subjected to tension, compression, and shearing; common theory of beams with thorough description of the distribution of stresses, shearing forces, and bending moments; deflection of beams.

A study is made of the strength of shafting and springs; combined stresses in beams subjected to tension, compression, and bending; also strength of riveted joints, columns, and thin hollow cylinders, and brief consideration of strains and the relation of the stresses on different planes in a body.

(Prerequisite, ME 1-2 and M 6)

5 semester hours credit

ME 5-6 Heat Engineering

The fundamentals of thermodynamics are discussed in this course and include the general theory of heat and matter; first and second laws of thermodynamics; equations of state; fundamental equations of thermodynamics; laws of perfect gases; properties of vapors including use of tables and charts; and the general equation for the flow of fluids. Particular emphasis is given to the properties of steam, the use of the steam tables, and the Mollier diagram.

The course also embraces a study of fuels and combustion of fuels as applied to steam boilers.

The purpose of the course is to familiarize the student with the theory of heat as applied to prime movers.

Descriptions of many different kinds of apparatus used in the steam power plant such as engines, turbines, and auxiliary equipment, including pumps, condensers, heaters, fans, etc., comprise the major part of the course. A large number of problems related to the apparatus discussed are solved. In addition to the above, such items as draft, chimneys, coal and ash handling equipment, piping and valves, and technical power plants are studied. In addition to the study of steam apparatus, air compressors and internal combustion engines are discussed.

(Prerequisite, P 1-2)

5 semester hours credit

ME 7 Mechanism (I)

The object of this course is to acquaint the student with the principles of mechanism which are met in practice and in machine design. The topics considered are pulley and gear train calculations, both simple and epicyclic, cam design, conjugate curves, pure rolling contact, theoretical design of gear-tooth shapes, and limitations in involute gearing. The velocity and acceleration analysis of basic linkages are studied in detail.

(Prerequisite, MD 1-2)

2½ semester hours credit

ME 9-10 Machine Design

The design aspect of "Materials and Their Properties," "Stress Analysis," "Fastenings," "Power Transmission Equipment — Belts, Chains, Gears, Clutches, Brakes, etc.," "Shafting Design," Bearings, Springs, Cams, Welding, Riveting, is presented for discussion in class and the solution of problems outside of class.

Visual aids such as movies and slides are used, in addition to field trips, to familiarize the student with the standard practices of machine manufacturers.

(Prerequisite, ME 3-4)

5 semester hours credit

ME 11-12 Mechanical Engineering Laboratory

This course includes a series of experiments upon various kinds of equipment used in modern power plants to demonstrate under actual conditions the principles developed in the Heat Engineering course. Additional experiments which include calibration of instruments, performance of hydraulic equipment, steam equipment as used in power plants, heating units for the household, air conditioning apparatus, internal combustion engines, and testing materials are performed. A complete report of each experiment is made.

(Prerequisite, ME 5-6)

5 semester hours credit

DRAWING**D 1-2 Engineering Drawing**

This course is planned to meet the requirements of a class composed of students who have had no previous instruction in drafting, and also for those who may have had one or two years' work in preparatory schools.

Instruction is given in the testing, use and care of the instruments and drawing supplies, and solutions are required for problems which are presented on about thirty drawing sheets. The topics studied in these sheets include technique practice, lettering, geometric construction, orthographic projections, auxiliary views, development of objects, isometric, cavalier and cabinet drawing, intersections, sections, helix and application, screw threads, dimensions and inking. A number of practical problems, pertaining to the professional courses to be taken, in which drawing is the application, are also given.

These give the student a thorough training in the fundamental principles of Engineering Drawing, so that he may easily do the drafting required in his professional course. A short lecture is given at the opening of each class based on the work at hand, and individual instruction is given during the remainder of the class period.

5 semester hours credit

MD 1-2 Machine Drawing

This course is conducted on a lecture-laboratory basis with the student working out problems under supervision. The fundamental principles of representing the shape and of specifying the size of such machine elements as castings, forgings, fabricated weldings, gears, cams, etc., are taught. The mediums used are multi-view orthographic projection, auxiliary and sectional views, along with the appropriate dimensioning techniques. Lectures and reading assignments are correlated with the classroom problems and cover such topics as the drawing techniques applicable to the particular study, American Standard drafting-room practices, methods and materials of machine production, fractional and decimal dimensioning systems, fasteners, bearings, lubrications, pulleys, piping, clutches, gears, cams, methods of reproduction, etc.

The types of drawings made and analyzed include preliminary machine sketches and assemblies, dimensioned detail working drawings from ma-

chine assemblies, assembly drawings from machine details, problems in gear and cam construction.

Drawing examinations covering the principal drawing and dimensioning techniques, and short written quizzes covering the lecture and textbook materials are given periodically throughout the course.

(Prerequisite, D 1, 2)

5 semester hours credit

MATHEMATICS

Sub-Freshman Mathematics

This course is devoted to a thorough study of Algebra I and Plane Geometry.

M 1 Algebra

Although the primary purpose of this course is to lay a thorough groundwork for the subsequent courses in Analytical Geometry, Calculus, and Applied Mechanics, it is nevertheless a complete unit in itself, and will enable the student to handle a considerable number of the problems arising in engineering practice.

Proceeding from a rapid review of the fundamental operations of Algebra, the work continues with a thorough study of fractions, functions, linear and quadratic equations, equations in quadratic form, graphs, exponents, complex numbers, binomial expansion, variation, and equations of higher degree than the second.

(Prerequisite, first course in Algebra and Plane Geometry)

2½ semester hours credit

M 2 Trigonometry

This course includes the solution of all triangles by both natural and logarithmic functions, identities, radian measure, principal values and the solution of trigonometric equations. Particular attention is given to the applications of Trigonometry to engineering practice.

(Prerequisite, M 1)

2½ semester hours credit

M 3 Analytical Geometry

This course consists of a study of the straight line, circle, and conic sections, using rectangular cartesian co-ordinates only; also the graphs of trigonometric, logarithmic, and exponential equations.

(Prerequisite, M 1-2)

with M 5, 2½ semester hours credit

M 5 Differential Calculus

The work in the course consists of differentiation of algebraic, trigonometric, exponential, and logarithmic functions, both explicit and implicit; slopes of curves; maxima and minima; derivatives of higher order; velocity and acceleration in rectilinear motion.

(Prerequisite, M 3)

with M 3, 2½ semester hours credit

M 6 Integral Calculus

This course deals with integration as the inverse of differentiation as well as the limit of summation. The topics covered are methods of integration; use of integral tables; definite integrals; areas in rectangular coordinates; length of curves; areas of surfaces of revolution; volumes of solids of revolution; multiple definite (iterated) integrals; centroids of plane areas; moment of inertia.

(Prerequisite, M 5)

2½ semester hours credit

PHYSICS**P 1 Physics I**

This course covers the principle of mechanics. Some of the topics covered are force; energy; work; statics; elasticity; linear, rotational and harmonic motion; liquids and gases.

Each lecture includes a demonstration period and a problem period in which the student learns the practical application of the physical laws being studied.

2½ semester hours credit

P 2 Physics II

This course begins with the study of wave motion and sound, and is followed by heat, light, and electricity.

The section in heat includes thermometry, expansion, calorimetry, behavior of gases, vaporization and transfer of heat. Under the subject of light are reflection, refraction, dispersion, diffraction and interference, lenses, and optical instruments. The study of electricity includes magnetism, electrostatics, resistance, capacitance, inductance, alternating currents, and series and parallel circuits.

The same lecture procedure is followed with respect to demonstrations and problems as is done in P 1.

(Prerequisite, P 1)

2½ semester hours credit

P 3 Electronic Physics

Designed especially for students taking the Electronic Engineering curriculum, this course deals with the fundamental principles of waves, with particular applications to electromagnetic radiation. Interference, diffraction, and polarization will be treated in detail. A considerable part of the course will be devoted to the study of antennas and the properties of the ionosphere.

(Prerequisite, P 2)

2½ semester hours credit

THE LINCOLN TECHNICAL INSTITUTE

360 Huntington Avenue

Boston 15, Massachusetts

To the Dean:

.....19.....

I(First name).....(Middle name).....(Last name).....hereby apply for admission to the
Lincoln Technical Institute in the term beginning in.....(Sept.—Jan.—June).....and submit the following information:

.....(Street address).....(Town).....(State).....(Phone).....
Age..... Date of Birth..... Married ☐ Single ☐
Citizen of U. S. Yes ☐ No ☐

Name of your employer.....Nature of your employment.....
Business address.....Business Telephone.....

I have attended, including other schools of the Northeastern University system, the following schools above grammar grade (if attendance at a university, *designate school*):

NAME OF SCHOOL	LOCATION — CITY, STATE				Chk. Yrs. Attended				Date Left	Date of Graduation	Degree if any
					1	2	3	4			

I request advanced standing credit for previous college work completed at (name of institution).....
..... I shall furnish transcript.

I wish to enroll for the following:

- ☐ Curriculum, leading to the Degree of Bachelor of Business Administration in Engineering and Management, offered by the School of Business, Northeastern University, and the Lincoln Technical Institute.
- ☐ Curriculum leading to the Degree of Associate in Engineering.
- ☐ Curriculum leading to the Diploma in Chemistry.
- ☐ I do not wish to pursue a complete curriculum but, as a special student, wish to enroll in the following courses:
.....

As part of the program checked above, I wish to elect the following major:

- ☐ CHEMISTRY
- ☐ CIVIL-STRUCTURAL ENGINEERING
- ☐ ELECTRICAL ENGINEERING
- ☐ I wish to take the Sub-Freshman program with the major checked above.
- ☐ ELECTRONICS ENGINEERING
- ☐ INDUSTRIAL ENGINEERING
- ☐ MECHANICAL ENGINEERING

Please answer the following questions:

- Have you passed a course in First Year Algebra?..... If so, give approximate year.....
- Have you passed a course in Plane Geometry?..... If so, give approximate year.....
- Have you passed a course in Elementary Chemistry?.... If so, give approximate year
- (for Chemistry students only)

Are you to take these courses under the G. I. Bill of Rights?.....Yes ☐ No ☐

Application Accepted by

.....
Signature of Student.....

A fee of five dollars must accompany this application. This fee is not returnable.

THE LINCOLN SCHOOLS

Evening Sessions
OPEN TO MEN AND WOMEN

LINCOLN TECHNICAL INSTITUTE

Degree of Associate in Engineering Programs

Courses leading to the Degree of Associate in Engineering are offered in the following major fields:

CHEMISTRY

ELECTRICAL

INDUSTRIAL

CIVIL-STRUCTURAL

ELECTRONICS

MECHANICAL

Degree of Bachelor of Business Administration Program

A six-year program conducted in conjunction with Northeastern University School of Business is available which leads to the Degree of B.B.A. in Engineering and Management awarded by Northeastern University.

Special Programs

For those who do not wish to take one of the regular programs, special programs consisting of one or more courses can be arranged to meet individual needs.

LINCOLN PREPARATORY SCHOOL

Individual high school subjects to meet particular needs, or leading to a diploma, are available.

Students may enter in September, January, and June.

*For further information write, indicating the School in which
you are interested*

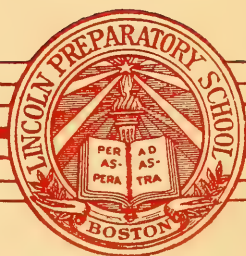
THE LINCOLN SCHOOLS

360 HUNTINGTON AVENUE, BOSTON 15, MASSACHUSETTS

Telephone: COpley 7-5252

1952-1953
EVENING SESSIONS
FIFTY-FIFTH YEAR

**LINCOLN
PREPARATORY
SCHOOL**



THE LINCOLN PREPARATORY SCHOOL

Evening high school courses are conducted on day-school standards by a competent faculty in a school which enjoys an excellent reputation among colleges and preparatory schools for its high scholastic performance as preparation for:

Employment in Business and Industry

Courses that offer sound general training whereby students develop the ability, poise, and self-confidence that make for success for those who do not plan further study on the college level. The competition of the reconversion period in business and industry will require the fullest development of one's abilities.

Colleges

Courses preparing student for admission to colleges —

By High School Diploma

By College Entrance Board Examinations

By Certification (without examination)

Professional Schools

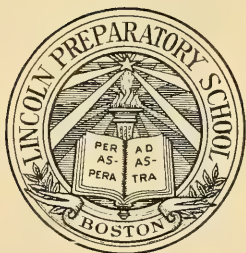
High school courses designed to prepare students for entrance to colleges of Engineering, Business, and the pre-legal college programs preparing for entrance into Schools of Law, both day and evening.

Nurses' Training in Hospitals

A high school course which prepares students to enter upon a training program in accredited hospitals.

Courses which prepare graduate nurses who are not high school graduates to fit themselves for graduate study, and for teaching and administrative positions in hospitals.

LINCOLN PREPARATORY SCHOOL



The School is situated at the entrance to the Huntington Avenue subway within nine minutes
of Park Street and easily accessible from all points

EVENING SESSIONS

Admits Men and Women

EFFECTIVE METHODS OF INSTRUCTION

Adapted for Evening Students

CALENDAR, 1952-1953

Summer Term, June, 1952-September, 1952

JUNE 2	Classes begin.
JULY 4	Legal holiday. No classes.
SEPTEMBER 1	Legal holiday. No classes.
SEPTEMBER 8-11	Final examinations.

School Year, September, 1952-May, 1953

SEPTEMBER 22, 23	Classes begin.
OCTOBER 13	Legal holiday. No classes.
NOVEMBER 11	Legal holiday. No classes.
NOVEMBER 27	Legal holiday. No classes.
DECEMBER 20	Last session before Christmas recess.

1953

JANUARY 5	Classes resume.
FEBRUARY 23	Legal holiday. No classes.
APRIL 20	Legal holiday. No classes.
MAY 13-JUNE 1	Final examinations.

Winter Term, January, 1953-May, 1953

JANUARY 6	Classes begin.
FEBRUARY 22	Legal holiday. No classes.
APRIL 20	Legal holiday. No classes.
MAY 19-21	Final examinations.

OFFICE HOURS

September 2, 1951-June 28, 1952

Monday through Friday.....	8:45 A.M.-9:00 P.M.
Saturdays.....	8:45 A.M.-12 NOON

June 30, 1952-August 16, 1952

Monday and Thursday.....	8:45 A.M.-9:00 P.M.
Tuesday, Wednesday and Friday.....	8:45 A.M.-5:00 P.M.

August 18, 1952-June 27, 1953

Monday through Friday.....	8:45 A.M.-9:00 P.M.
Saturdays.....	8:45 A.M.-12 NOON

INTERVIEWS

Prospective students, or those desiring advice or guidance regarding any part of the school work, are encouraged to arrange for personal interviews with the Principal or other officers of instruction. Career planning through competent guidance provides an understanding of requirements for reaching vocational objectives and develops that definiteness of purpose so vital to success.

BOARD OF TRUSTEES

ROBERT GRAY DODGE, *Chairman*

FRANK LINCOLN RICHARDSON, *Vice-Chairman*

GEORGE LOUIS BARNES
FARWELL GREGG BEMIS
RICHARD L. BOWDITCH
GODFREY LOWELL CABOT
WALTER CHANNING
WILLIAM CONVERSE CHICK
EVERETT AVERY CHURCHILL
PAUL FOSTER CLARK
MARSHALL BERTRAND DALTON
EDWARD DANA
DAVID FRANK EDWARDS
CARL STEPHENS ELL
WILLIAM PARTRIDGE ELLISON
ROBERT GREENOUGH EMERSON
JOHN WELLS FARLEY
ERNEST BIGELOW FREEMAN
MERRILL GRISWOLD
GEORGE HANSEN
CHANDLER HOVEY

MAYNARD HUTCHINSON
RAY E. JOHNS
MICHAEL T. KELLEHER
HARRY HAMILTON KERR
IRVING EDWIN MOULTROP
GEORGE OLMSTED, JR.
AUGUSTIN HAMILTON PARKER, JR.
FREDERICK SANFORD PRATT
ROGER PRESTON
WILLIAM MCNEAR RAND
STUART CRAIG RAND
JAMES LORIN RICHARDS
HAROLD BOURS RICHMOND
CHARLES FOREST RITTENHOUSE
GIFFORD K. SIMONDS, JR.
FRANCIS ROBERT CARNEGIE STEELE
CHARLES STETSON
EARL PLACE STEVENSON
ROBERT TREAT PAINE STORER

OFFICERS OF ADMINISTRATION

CARL STEPHENS ELL, A.B., M.S., Ed.M., Sc.D., *President*

EVERETT AVERY CHURCHILL, A.B., Ed.D., *Vice-President*

ALBERT ELLSWORTH EVERETT, B.C.E., M.B.A., S.B.
Director of Evening Program

DONALD HERSHEY MACKENZIE, B.Ch.E., S.B., Ed.M., *Principal*

OFFICE STAFF

ANNE M. MOORE, *Administrative Secretary*

JOAN M. CARR, *Secretary*

KATHERINE A. CROWLEY, *Secretary-Recorder*

HELEN A. DOLAN, *Typist*

FACULTY

The faculty of the Lincoln Preparatory School has been carefully chosen from the leading high and preparatory school teachers in Boston and its vicinity. They are college trained men who have proved their ability in their various fields of specialization. They are selected on the basis of their ability to convey knowledge to others in an interesting, inspiring and effective manner. Most of these men have served with the School for many years. They have an understanding of and a sincere respect for evening school students and take a personal interest in their ambitions and success.

WALTER ALFRED BALDWIN

Appointed 1910

A.B. Ohio Wesleyan University, 1906; graduate study University of Chicago and Harvard University; Head, Department of Mathematics, Chillicothe High School, Ohio, 1906-08; Head, Department of Mathematics, Mansfield High School, Ohio, 1908-10; Head, Science Department, Huntington School for Boys, Boston, 1912-14; Instructor in Physics and Chemistry, Lincoln Preparatory School, 1910-.

Chemistry

G. WARREN BATES

Appointed 1949

B.S. Massachusetts Institute of Technology, 1926; M.A. Boston University, 1938; Instructor in Mathematics, Mercersburg Academy, Mercersburg, Pa., 1926-28; Newburyport High School, Newburyport, Mass., 1928-30; Medford High School, Medford, Mass., 1930-.

Mathematics

WILLIAM TILDEN BENTLEY

Appointed 1916

A.B. Harvard University, 1907; Submaster, Malden High School, 1914-24; Principal, Belmont School, 1924-29; Principal, Charles A. Daniels School, 1929-41; Principal, Glenwood School, 1941-.

English

CARL F. CHRISTIANSON

Appointed 1933

A.B. Wesleyan University, 1923; Tilton School, New Hampshire, 1923-24; Abington High School, 1924-27; Huntington School for Boys, 1927-.

History, Government, Economics

MICHAEL D'AMELIO

Appointed 1942

A.B. Harvard College, 1922; Instructor, Brookline High School, 1922-26; Instructor, Boston Latin School, 1926-27; Instructor in Mathematics, English High School, 1927-1950; Instructor in Mathematics, Boston Latin School, 1950-.

Mathematics

GEORGE R. FAXON

Appointed 1948

A.B. Harvard University, 1928; M.S. University of New Hampshire, 1932; Graduate study, Boston University, London School of Economics, University of Marburg, Germany; Teacher of Mathematics, Emerson School for Boys, 1929-31; Teacher of Mathematics, Marblehead High School, 1931-32; Teacher of Mathematics, Roxbury Memorial High School, 1933-; Assistant Director, Vocational and Educational Guidance, Biarritz American University, 1945.

Mathematics

WILLIAM D. FINAN*Appointed 1946*

A.B. Boston College, 1938; M.A. Columbia University, 1941; Instructor in English and Mathematics, Summit, New Jersey, 1938-42; Instructor in Mathematics, Weeks Junior High School, Newton, Mass., 1948-.

*Mathematics***PHILIP L. HOLMES***Appointed 1945*

A.B. Harvard University, 1924; M.A. Harvard University, 1934; Instructor in German, Trinity College, Hartford, Connecticut, 1925; Instructor in Modern Languages, Somerville High School, 1933-.

*Spanish and German***PERCY EDWARD JONES***Appointed 1923*

Sloyd Training School, 1920; B.S. Boston University, 1930; Instructor in Mathematics and Drawing, Huntington School for Boys, 1919-.

*Mathematics***A. ROBERT KELMAN***Appointed 1930*

B.B.A. Boston University, 1925; M.A. (History), Boston College Graduate School, 1941; School of Education, Harvard University; Instructor, Quincy Senior High School, 1921-25; Instructor, Weaver High School, Hartford, Connecticut, 1925-26; Instructor, Bulkeley High School, Hartford, Connecticut, 1926-29; Head of the Department of Social Studies, The Senior High School, Watertown, 1930-.

*History***ALFRED BLANCHARD KERSHAW***Appointed 1928*

A.B. Amherst, 1904; A.M. Amherst, 1907; Instructor, The Allen School, West Newton, 1908-09; Instructor in English, Brockton High School, 1909-11; Master, English High School, Boston, 1911-.

*English***ARTHUR O. MCCARTNEY***Appointed 1945*

B.S. University of New Hampshire, 1915; Graduate study at Harvard, 1940-41; Instructor in Mathematics and Physics, Watertown High School, 1941-45; Instructor in Mathematics, Framingham High School, 1945-46; Instructor in Physics and Mathematics, The New Preparatory School, 1946-.

*Physics***JOHN W. MCGUCKIAN***Appointed 1944*

B.Sc. University of Massachusetts, 1931; M.Ed. Boston Teachers College, 1937; Instructor, Jamaica Plain High School, 1931-42; Junior Master, Roslindale High School, 1942-46; Master, Jamaica Plain High School, 1946-.

*Biology***RICHARD LAWRENCE MCGUFFIN***Appointed 1928*

B.A. Boston University, 1920; M.A. Boston University, 1925; Ed.M. Harvard Graduate School of Education, 1926; Instructor in English, Lebanon Boys' School, Suk-el-Gharb, Syria, 1921-24; Directeur, Foyer Des Garcons, Tunis, North Africa, 1927-28; French Master, Boston Latin School, 1929-.

*French***THEODORE WOODS NOON***Appointed 1922*

A.B. Yale College, 1896; M.A. Yale University, 1898; Exhibitioner, Emmanuel College, University of Cambridge, England, 1906-07; Master, Lawrenceville School, Lawrenceville, New Jersey, 1908-18; B.D. University of Chicago, 1913; S.T.M. Boston University, 1922; Ed.M. Harvard University, 1924; Instructor in Lincoln Preparatory School and Huntington School for Boys, Boston, 1922-.

Latin

DEANE STANFIELD PEACOCK

Appointed 1931

A.B. Bowdoin College, 1917; A.M. Bates College, 1927; Ed.M. Harvard University, 1932; Principal, Oakland High School, Maine, 1919-24; Principal, Freeport High School, Maine, 1924-31; Junior Master, English High School, Boston, 1932-45; Master, English High School, 1945-.

English

OLAN A. RAND

Appointed 1943

B.A. Washington and Lee, 1926; Graduate study, University of Vermont and University of New Hampshire; Teacher, Franklin High School, New Hampshire, 1926-28; Teacher, Spaulding High School, Barre, Vermont, 1929-43; Instructor, The Huntington School, 1943-.

English

HISTORICAL STATEMENT

The Lincoln Preparatory School, affiliated with Northeastern University and known for many years as the Northeastern Preparatory School, had its real beginning in 1897 in the separate evening courses offered in History, Science, and other subjects of a cultural nature, and in certain trade courses intended to benefit men engaged in various occupations.

Gradually the trade courses were discontinued and the remaining subjects were welded into a regular high school program, upon the completion of which a standard high school diploma was awarded.

All classes in the Lincoln Preparatory School are held in the evening and are especially designed to meet the needs of those who are employed during the day.

The primary purpose of the School has been effective preparation of students for college entrance. For this reason constant attention has been paid through the years to the maintenance and improvement of standards.

In 1925 women were admitted to classes on the same basis as men. The School was accredited by the New England College Entrance Certificate Board, later called the New England College Admissions Board, from 1924 until the Board disbanded in 1948. This was a marked distinction in the case of an evening school, and an expression of confidence that day-school standards were maintained. The School today offers curricula in the general, scientific, and classical fields. The enrollment has increased from fewer than fifty students to almost five hundred, of whom two-fifths are women. The faculty has been increased until it now numbers eighteen men of wide experience and training, drawn from the leading day preparatory and high schools of Metropolitan Boston.

Through the Lincoln Preparatory School many men and women have been able to solve their problems and to secure that education which has enabled them to succeed in the work for which they are adapted by ability and interest. Without these facilities many of these alumni would still be occupying minor positions with little opportunity for advancement on account of lack of training.

THE LINCOLN PREPARATORY SCHOOL

Characteristics of the School

Before a prospective student makes a final decision regarding the evening school he wishes to enter, he should ascertain some of the characteristics of a good preparatory school. Following are the outstanding characteristics of the Lincoln Preparatory School:

1. It is non-proprietary, and organized exclusively for service to students, the income being devoted to that end rather than being organized for profit.
2. Adequate fees are charged to insure the employment of the best teachers attainable and to provide constant improvement in the educational processes.
3. Scholarship funds are available to assist deserving and needy students who cannot meet the fees that must be charged if high standards are to be maintained.
4. It has a trained and experienced faculty; that is, the men who form its staff are teachers of experience with long practice in dealing with the individual problems of students.
5. All work is conducted on a regular classroom basis to meet the approval of higher institutions.
6. The size of the classes is such as to permit reasonably individualized attention.
7. The courses are conducted so that the content of each course is thoroughly covered in order that it may be of the maximum value to the student, not only in the interests of his personal growth, but as preparation for further study.
8. The student body is adequately prepared for the type of instruction which is to be imparted in the classroom. The level of achievement is not lowered by the admission of unfit students.
9. High quality of performance is maintained in the classroom, and students bring to bear on their studies an interest and enthusiasm which permit all work to be conducted on a high, qualitative plane. Classes are not conducted to be a vehicle by which students may obtain credit by easy and slipshod methods. Credit is awarded only when the quality of the student's work meets the definition of Requirements of the College Entrance Examination Board.
10. Its graduates have proved successful in college, in the professions, and in business life.
11. There are adequate laboratories, classrooms, and other facilities.
12. The employment of a full-time administrative organization affords opportunities for skilled educational and vocational guidance.

Aims of the School

The aims of the Lincoln Preparatory School may be classified as follows:

1. The offering of educational opportunities to men and women by methods of instruction carefully adapted to the needs of adult students.
2. The providing of this instruction at convenient evening hours, so that the student need not leave his or her present employment while obtaining an education.
3. The conducting of the school work on such a high qualitative plane that those students who wish to prepare for college may be adequately prepared for entrance examinations, or for entrance by certificate if their ability and performance warrant.
4. The offering of a general program to those who do not plan to enter college, that they may develop a taste for the better things in life and that they may advance to a larger personal growth.
5. The offering of special courses for those who have particular needs related to specialized occupations.
6. The selection of the most competent and experienced faculty available.
7. The maintenance of the excellent work which has earned for the School the excellent reputation it enjoys among colleges and secondary schools.
8. The personal interest of every school officer in the problem of the individual student.

Location of the School

The work of the School is conducted in the following five buildings of Northeastern University situated on Huntington Avenue just beyond Massachusetts Avenue at the entrance to the Huntington Avenue subway.

Richards Hall is situated at 360 Huntington Avenue. This building is adequately equipped with classroom, drawing room, and laboratory facilities. In the basement are the checkroom and the bookstore. The School office is located on the first floor.

Science Hall. In this building are located the Chemical Engineering and Biological laboratories, and eighteen classrooms and lecture halls.

The Library Building, in which are situated the University library, several classrooms, and drawing rooms.

The Botolph Building is situated in the rear of the East Building and contains several classrooms and the Electrical laboratories.

The Student Center Building contains administrative offices and facilities for student activities. There are reading and study rooms, lounges, additional classrooms and an auditorium seating 1,350 for student convocations.

Student Body

The students of the Lincoln Preparatory School are men and women of earnest purpose, who have come to recognize the value of education but

who through force of circumstances have been unable to complete a high school course. The ages of the students range *from sixteen to fifty-three*, with the average age *twenty-two*.

Some students are attempting to increase their vocational opportunities; some are completing a high school education begun elsewhere but interrupted; some are beginning here their high school work; some are adding to their training cultural or practical subjects which were formerly omitted; some are undertaking special courses to prepare them for increased usefulness in their work. In fact, the School is ready to serve students of all ages at a point where they need real service. The student body represents also men and women from all walks of life.

Alumni

The Alumni of the Lincoln Preparatory School are excellent witnesses of the work the School has done and is doing.

Many of our graduates are engaged in the various professions, such as Engineering, Law, Medicine, Teaching, and Dentistry, or are engaged in successful business activities and in public life. Furthermore, the School has been of benefit to many who did not complete our graduation requirements but obtained here the credits necessary for college entrance or for some other specific purpose, having completed elsewhere part of their high school training.

Women graduates of this School are in the hospital training schools of the State or have graduated therefrom. Some occupy teaching and administrative positions in our hospitals. Many others have proceeded to colleges and professional schools to prepare for positions in teaching, library science, and business.

Our former students are in colleges and professional schools scattered across the country. The following are some of the colleges that have been attended by Alumni of the Lincoln Preparatory School:

HARVARD UNIVERSITY
TUFTS COLLEGE
MASSACHUSETTS INSTITUTE
OF TECHNOLOGY
BOSTON UNIVERSITY
UNIVERSITY OF MICHIGAN
JACKSON COLLEGE
PURDUE UNIVERSITY
UNIVERSITY OF ALABAMA
COLUMBIA UNIVERSITY
COLBY COLLEGE
ATLANTIC UNION COLLEGE

SIMMONS COLLEGE
UNIVERSITY OF MAINE
CLARK UNIVERSITY
UNIVERSITY OF MASSACHUSETTS
UNIVERSITY OF CHICAGO
SYRACUSE UNIVERSITY
YALE UNIVERSITY
DARTMOUTH COLLEGE
BOWDOIN COLLEGE
BATES COLLEGE
NORTHEASTERN UNIVERSITY
UNIVERSITY OF NEW HAMPSHIRE

GENERAL INFORMATION

Libraries

In the Library Building a large and well-equipped library is available for the use of students. The reading rooms are open from 9 A.M. to 7.30 P.M. on weekdays, and from 9 A.M. to 12 NOON on Saturdays. Students have also the privilege of securing books from the Boston Public Library and its branches. To obtain this privilege application should be made at the School office, where the necessary blanks will be furnished.

Textbooks and Supplies

The Bookstore, which is situated in Richards Hall, is operated for the convenience of the student body. All books and supplies which are required by the students for their work in the School may be purchased at the Bookstore.

Railroad Tickets

Vouchers for half-fare tickets on the Metropolitan Transit Authority are issued by the School office. The railroad systems entering Boston issue students' tickets to students under twenty-one years of age. Veterans, regardless of age, are eligible for reduced rates on most of the railroads. Applications for these may be obtained at a railroad office and presented at the School office for signature.

Visitors

Visitors are always welcome at one class session in any department. Those who wish to visit any of the classes should call at the School office and obtain a visitor's card signed by the Principal.

Educational Guidance

Prospective students or those desiring advice or guidance with regard to any part of the school work or curricula, or who wish assistance in the solution of their educational problems, should note the fact that interviews are available without obligation, and that the officers of the School will do their utmost to see that a program is designed which is the most satisfactory for the individual student. In certain cases, other institutions may be recommended which suit the student's needs better. Furthermore, it is important that those with educational problems to solve should realize the necessity for care in approaching educational work so that the program selected will be on the best educational basis.

INFORMATION REGARDING ADMISSION

Admission Requirements

Any man or woman of good moral character, regardless of occupation, race or creed, who has completed at least eight grades of a grammar school, or the equivalent, and is over sixteen years of age, may enroll in the School.

The courses offered are designed to prepare students to enter institutions of higher learning. Those students, however, who do not intend to proceed to higher institutions may select from the offering of courses a special combination of subjects which will benefit them in the work in which they are engaged during the day. Before enrolling for such subjects, students are urged to see the Principal, explaining the particular nature of the employment in which they are engaged, so that he can arrange the program best suited for their needs. Special combinations of subjects may be selected to embrace business, science, or special technical work.

Applications for Admission

Students who plan to enter the School must file the official application blank which must be accompanied by the registration fee of five dollars. All applications for admission should be filed as early as possible in order that the status of each student may be definitely determined and a satisfactory program arranged before the actual opening of the term.

Credit from Other Schools

Students who have completed high school work in other approved institutions may obtain credit for that work towards the diploma of this School by presenting a certified transcript of record from the school previously attended. The officers of the School are glad at all times to obtain for prospective students transcripts of their records of work at other schools, evaluate such records in terms of diploma credits and suggest a program, indicating the cost of the program and the time necessary to meet graduation requirements.

The responsibility devolves upon the student for making sure that his program does not contain a subject for which prior credit has already been awarded in some other school. Such courses, however, may be taken without credit as review courses preparatory to later advanced work.

SCHEDULE INFORMATION

Terms and Hours of Attendance

When arranging a program for a student the School officers usually assign work which requires attendance for *only two evenings a week*.

All classes are scheduled to meet between the hours of 7 P.M. and 10 P.M.

Each term a schedule is prepared listing the courses to be offered and the hours at which they meet. A copy may be obtained on request.

Following is the general arrangement for the completion of a course in each term of the school year.

Regular Term

The Regular Term begins in September and continues for 32 weeks. Non-Science courses are offered on Tuesday and Friday evenings and a student may carry one, two or three full-unit courses. Each full-unit course requires attendance for one hour *twice* a week.

Science courses are offered on a different evening and require attendance three hours per evening once a week. A student may carry one Science course in addition to the three non-Science courses mentioned.

Winter Term

The Winter Term begins during the first week in January and extends for 20 weeks. Classes meet on Tuesday and Thursday evenings during this term. A student may carry two non-Science courses, each requiring attendance for one and a half hours *twice* a week, or one Science course which requires attendance for three hours *twice* a week.

Summer Term

The Summer Term begins during the first week of June and extends for 15 weeks. The work is carried on more intensively than in the Regular Term or Winter Term, but the same material is covered. Classes meet on Monday and Thursday evenings during this term.

A student may carry two non-Science courses, each requiring attendance for one and a half hours *twice* a week, or one Science course which requires attendance for three hours *twice* a week.

Courses of Study

<i>Subject</i>	<i>Term Offered</i>
Algebra 1	All Terms
Algebra 2	All Terms
*Biology	Regular and Summer Terms
*Chemistry	Regular and Summer Terms
Economics	Regular and Summer Terms
English 1	All Terms
English 2	All Terms
English 3	All Terms
English 4	All Terms
French 1	Regular and Summer Terms
French 2	Regular and Summer Terms
French 3	Regular Term
General Mathematics	Regular Term
Geometry (Plane)	All Terms
Geometry (Solid)	All Terms
German 1	Regular Term
German 2	Regular Term
Government	Regular and Summer Terms
History (Ancient)	Regular Term
History (European)	Summer Term
History (United States)	All Terms
Latin 1	Regular and Summer Terms
Latin 2	Regular and Summer Terms
*Physics	All Terms
Problems of Democracy	Regular Term
Spanish 1	Regular Term
Spanish 2	Regular Term
Trigonometry	All Terms

*These courses meet only once a week in the regular term and twice a week in the winter and summer terms. All other courses meet twice a week.

DIPLOMA INFORMATION

The Unit System Explained

Frequent reference is made in this catalog to "units," and that there may be no misunderstanding in the minds of students, this explanation is offered. A unit of high school credit is given upon the satisfactory completion of the work of one school year in a single standard subject, the equivalent of which is covered by this School in thirty-two weeks or in the intensive courses of twenty and fifteen weeks offered in the winter and summer terms respectively. The following exception is to be noted: Four full courses in English total three units towards graduation or towards college entrance, and Solid Geometry and Trigonometry are half-unit courses.

Requirements for Graduation

The diploma of the Lincoln Preparatory School is granted without charge to the student on the completion of a total of fifteen units of work, *of which at least the last four must have been earned in the Lincoln Preparatory School.* In addition, each student must have completed in this School or elsewhere the required subjects for the diploma.

Admission to College

Since the Lincoln Preparatory School offers regular college preparatory courses for those who wish to enter college, a student, according to his record and his plan of procedure, may enter college in one of the following ways:

By Diploma. Certain colleges will admit students on the diploma from this School. Among these colleges are all those that accept a standard high school diploma.

By Examination. Certain colleges require examination from all candidates. This School prepares students for all college entrance examinations and for the examinations of the College Entrance Examination Board.

By Certificate. Certain colleges will accept students for admission without examination, providing they have certificate grades. Generally speaking, *institutions that accept students by the certificate method will accept the certificate of this School. The certificate grade is 80 per cent.*

Admission to Hospital Training Schools

The work conducted by the Lincoln Preparatory School is accredited by the Massachusetts hospitals and by the State Board of Registration in

Medicine. The State Board of Registration in Medicine and the Board of Registration of Nurses have ruled that a high school education or its equivalent is a prerequisite for admission to hospital training schools. The high school certificate must show the completion of fifteen units accepted by the high school in meeting graduation requirements.

Since the School is fully accredited, most hospitals will admit students who hold the diploma of the School even though all grades are not of certificate rank. A few hospitals, however, require certificate grades of candidates for training. Certificate grades from this School are acceptable. Each student should ascertain, however, the definite entrance requirements of the hospital she plans to enter.

An officer of the School will be glad to arrange a program so that these electives will be judiciously chosen, not only to aid the student in the subsequent subjects, but to meet the requirements of other states with which a reciprocal arrangement exists with the State of Massachusetts.

For those already engaged in the profession of nursing, attention is directed to facilities which are available to those who have not completed a high school education in accordance with the above demands. New regulations have been formed regarding institutional promotion and regarding teaching and administrative positions in hospitals, and while such legislation is not retroactive, it will certainly prove helpful to those who already occupy such positions to be adequately equipped for advancement and promotion in the event of transfer.

How Long Will It Take to Obtain a Diploma?

The flexible schedule and the twelve months' operation of the Lincoln Preparatory School enable a student to save considerable time. The exact time that it will take to obtain a diploma is dependent upon credit from former institutions attended, hours available for study, and the number of courses pursued. A student who enters school without any credit for former high school attendance can complete his course in from three to five years, according to the number of summer terms he attends. However, it is urged upon students that *a high school education is a matter of accomplishment and not a matter of time*, and the School insists on a high standard of accomplishment.

PROGRAM INFORMATION

How to Plan Your Program of Classes

In choosing subjects each term, students should bear in mind:

- (a) The requirements for graduation from the Lincoln Preparatory School. These are given in the section below.
- (b) The admission requirements of the higher institution they wish to enter. Catalogs of most colleges are on file at the School office. In case of doubt, consult these and talk with the Principal or his assistants.
- (c) Language and Mathematics requirements vary somewhat for entrance to the different colleges. This is especially true of the Latin requirements. Some colleges require three entrance units in either French or German. *It is the student's responsibility to meet the requirements of the college he elects to enter.*
- (d) The special requirements for various professions and vocations.
- (e) Their special interests, in the event that courses are chosen from the cultural point of view.

It is especially important to meet the requirements for graduation so that a diploma may be obtained. Most colleges and hospitals and many lines of business and industry not only require fifteen units of high school work, but also insist that the student be a graduate of a recognized high school. Moreover, in business and in everyday life it means infinitely more to say one is a high school graduate than merely to say one has completed fifteen units of high school work.

Required Subjects

In order to be eligible for a Lincoln Preparatory School Diploma, every student must complete, either in this school or elsewhere, the following subjects:

Required:	Units
English (4 years)	3
United States History	1
Science (either Physics, Chemistry or Biology)	1
	—
	5
Electives	10
	—
	15

These elective ten units should be selected in view of the student's future plans.

Typical College Admission Requirements

Particular attention is called to the wide variation in admission requirements among the various colleges, universities and professional schools. Listed below are typical requirements for the various types of schools. They are, however, general in nature. *It is the student's responsibility to meet the requirements of the college he elects to enter*, and it is recommended that he consult the Director of Admissions of that college in ample time to arrange a program which would qualify him for admission.

A. For admission to Engineering Schools and Colleges of Liberal Arts offering the degree of Bachelor of Science

Required:	Units
English (4 years)	3
Algebra	2
Plane Geometry	1
Trigonometry and Solid Geometry	1
French or German or Spanish	3
United States History	1
Physics	1
	—
	12
Electives	3
	—
	15

B. For admission to Liberal Arts Colleges offering the degree of Bachelor of Arts

Required:	Units
English (4 years)	3
Algebra	2
Plane Geometry	1
French or German or Spanish	3
United States History	1
Physics or Chemistry or Biology	1
	—
	11
Electives	4
	—
	15

C. For admission to Colleges of Business Administration

<i>Required:</i>	Units
English (4 years)	3
Algebra	1
United States History	1
Science, social studies, mathematics and/or foreign language.....	5
Physics or Chemistry or Biology.....	1
	—
	11
Electives	4
	—
	15

D. For admission to Training School for Nurses

<i>Required:</i>	Units
English (4 years)	3
Mathematics	1
United States History	1
Chemistry and Biology	2
	—
	7
Electives	8
	—
	15

Electives

The remaining units needed to complete the required fifteen units can be selected from the following groups, with the provision that no more than four units will be accepted in any one group. *Students should bear in mind that one unit of a foreign language is not acceptable for credit* and that most schools will accept two units of two foreign languages in place of three units of one foreign language.

Foreign Language

Mathematics

Science

Social Studies

Commercial Studies

Fine and Practical Arts

Miscellaneous

ADMINISTRATIVE REGULATIONS

Examinations and Quizzes

Examinations are held throughout the term at the discretion of the instructors. Final examinations are required upon the completion of all courses. The following system of grading is used:

- A — 90 to 100 — Excellent
- B — 80 to 89 — Good
- C — 70 to 79 — Fair
- D — 60 to 69 — Lowest Passing Grade
- E — 50 to 59 — Conditioned
- F — Below 50 — Failure

A student marked E (Conditioned) may enroll in the advanced course in the same subject immediately following, but upon condition that he remove his deficiency by special examination early in the next term. A fee of \$3 is required for each such examination regularly scheduled.

Transfers

Students are not permitted to change from one course to another without first consulting the Principal or other duly authorized officer of the School and receiving a Transfer Order.

Reports of Standing

An informal report of the student's standing is issued at mid-term; and the formal report, covering the full record of the term, is issued at the close of each year.

In the case of students who are under twenty-one years of age, reports may be sent to parents in the event of unsatisfactory work on the part of the student, non-compliance with administrative regulations, continued absence, and withdrawal. Parents of minors may obtain reports at any time on request.

Attendance Requirements

A careful record of attendance upon class exercises is kept for each student. Absence from regularly scheduled classes on any subject will seriously affect the standing of the student. It may cause the removal of certain subjects from his schedule and the listing of these as "conditioned subjects." However, if reasonable excuse for absence be presented, the student may be allowed to make up the time lost, and be given credit for the work; but he must complete the work at such time and in such manner as his instructor in the course shall designate.

Students who are absent for six consecutive sessions are automatically withdrawn from the class rolls and may not be admitted to class until they have been reinstated by the Principal.

A minimum attendance record of 75 per cent must be maintained in all classes before a student will be admitted to examination.

Scholarships

The Executive Council has made available a few scholarships to assist needy students of good mental capacity who, because of financial limitations, might be deprived of educational opportunities. The award when a scholarship is granted is never in excess of one-half of the student's tuition fees for the year.

Late Registration

Those who find it necessary to register late may at the discretion of the Principal be permitted to enter the School provided they have not lost so much work as to render it impossible for them to proceed with the courses. Only in exceptional cases is one admitted to a class after the third session.

No reduction in fees is made because of late enrollment.

Examination Fees

The fee for a condition or make-up examination regularly scheduled is \$3.

The fee for a make-up quiz regularly scheduled is \$1.50.

Charges for Damages

Students who damage apparatus in the laboratories or who willfully destroy School property will be responsible for the replacement of such damaged articles or for the cost of replacing where this is undertaken by the School.

TUITION AND OTHER FEES

Matriculation Fee

A matriculation fee of \$5.00 must accompany the initial application for admission to the School. This fee is not refundable.

Tuition

The cost of each course is \$40.00, with the exception of Solid Geometry and Trigonometry, which are \$20.00 each if taken separately.

Payment Plans

For each term indicated below is listed the appropriate payment plan. When these plans are adopted, they must be rigidly adhered to. *In certain cases, however, even the special plan of payment will not meet the needs of many deserving students. Such students are requested to confer with an officer of the School, who will arrange a satisfactory plan for the payment of fees.*

Regular Term

Tuition is payable in four instalments. The first payment is due at the time of registration. The subsequent payments are due on November 17, February 2 and March 23.

Winter Term

Tuition is payable in two instalments. The first payment is due at the time of registration. The second payment is due on March 16.

Summer Term

Tuition is payable in two instalments. The first payment is due at the time of registration. The second payment is due on July 13.

Laboratory Fees

Biology: A laboratory fee of \$5.00 is charged to students taking Biology.

Chemistry: A laboratory fee of \$5.00 is charged to students taking Chemistry, and, in addition, they are required to make a laboratory deposit of \$5.00. The unused portion of this deposit is refunded after deduction for breakage and non-returnables.

Late Payment Fee

Bills for tuition and fees are payable on or before Saturday of the week of issuance. A Late Payment Fee of \$2.00 is charged for all students failing to comply unless special payment arrangements are approved by the Students Accounts Office.

Late Registration Fee

Students are urged to register well in advance of the official opening of the semester, since any student who registers after Saturday of the opening week of the School term is charged a late registration fee of \$5.00.

REFUND OF TUITION

Requests for refunds must be made at the time of filing the application for withdrawal at the school office. If the withdrawal notification is sent in by mail, the refund should be requested in the letter with reasons which necessitate the withdrawal. *No refunds will be granted to a student who voluntarily withdraws* or who has attended more than five weeks of the term for which payment has been made.

Refunds of tuition will be considered only in the following instances:

1. If, because of illness, a student is compelled to withdraw before the fifth week of the term, or
2. If a student who is regularly employed is sent out of town permanently by his employer, or
3. If the hours of employment of a student who is regularly employed are changed so as to make it impossible for him to continue in attendance, or
4. If a student is inducted into military service.

The Committee on Withdrawals will consider requests for tuition refunds only on the following bases:

1. That the application for withdrawal be made immediately after the student ceases attendance;
2. The request for refund is accompanied by an *acceptable* physician's certificate in the instance of illness, or by an *acceptable* employer's certification in the instance of a change in place or hours of employment;
3. Evidence of induction into military service.

For cases complying with the above, partial refunds on tuition for the half year may be allowed according to the following schedule:

Petition for Withdrawal Filed Within:

	Refund to Student in		
	Regular Term	Winter Term	Summer Term
One Week	80 per cent	80 per cent	80 per cent
Two Weeks	80 per cent	80 per cent	60 per cent
Three Weeks	60 per cent	60 per cent	40 per cent
Four Weeks	40 per cent	40 per cent	20 per cent
Five Weeks	20 per cent	20 per cent	0 per cent
Six Weeks	0 per cent	20 per cent	0 per cent
After Six Weeks	0 per cent	0 per cent	0 per cent

The above does not include fixed or non-refundable fees or laboratory fees for which there is no refund allowed.

The official "Application for Withdrawal" form may be obtained in the school office. All refunds are made through the Student Accounts Office of the University. The refund procedure in such cases takes from two to three weeks. A check is mailed directly to the student for any refund to which he is entitled.

OUTLINES OF COURSES

The Lincoln Preparatory School reserves the right to change the arrangement of courses, the requirements for graduation, tuition fees, and other regulations affecting the students. Such regulations will affect both old and new students.

Note: The courses of the School are arranged in "units."

A unit is ordinarily the amount of work covered in a single subject taken four or five times a week for a year in a standard day high school.

In this School a unit may be covered in each subject in thirty-two weeks. See page 17 for explanation of unit system.

Students carry one, two or sometimes four subjects at a time. Fifteen units, properly selected (see pages 18 and 19), are required for graduation.

The high school courses described below are the equivalent of similar courses offered in a standard day high school.

English

The fundamental purposes of the department are to give the student efficient training in grammar in order to afford a sound basis for correct speech and writing; to instill correct principles of constructing sentences and paragraphs; to help him enlarge his vocabulary and to acquire an interest in words; to train him in the elements of logic as related to the organization and expression of thought; to teach him how to study; to impart an elementary knowledge of the types and the history of English literature; and to aid him in forming a taste for good literature and a genuine appreciation thereof.

English 1. This course is designed to bridge the gap between grade and high school English. Fundamentals of English Grammar, sentence building, and revision, the more important rules of spelling and punctuation, word and vocabulary building, introduction to paragraph writing, practical exercises in speaking and writing, letter writing, and an introduction to literary selections as models for voluntary reading are presented.

English 2. This course marks the beginning of a more intensive study of English, both as a tool and as literature. Functional grammar, sentence revision based on principles of rhetoric, diction (word study), development of the paragraph, careful planning of themes, and a beginning of the critical study of literary forms, both poetry and prose, form the basis of the course.

English 3. A review of grammar, punctuation, sentence structure, and paragraph construction prepares the student for the writing of various types of compositions. Special attention is given to the development of a well-rounded vocabulary. Readings from American literature include the short story, essay, drama, novel, and different types of poetry.

English 4. This course completes the two-year sequence begun in English 3. It prepares students for college entrance and College Board examinations and also

stresses the needs of the student who does not intend to pursue formal study in a higher institution. By means of thought-provoking reading material, both classic and modern, it stimulates written expression on subjects of interest to the individual student. Compositions are submitted at regular intervals throughout the term. The essay, the drama, the lyric poem, and prose fiction are studied, and the principles underlying these forms of art are presented.

Latin

Exercises in translation at sight begin with the first lessons in which Latin sentences of any length occur, and continue throughout the course to insure correct methods of work on the part of the student. In the translations of passages from the Latin, the use of clear and natural English is insisted upon. Reading aloud is encouraged. The work in Latin Composition aims to give the student a thorough knowledge of the fundamental principles of Latin syntax. It has been found advantageous to use a double system of notebooks, calling for special written work from the student. This work deals with Latin forms, principles of Latin syntax, writing of English-Latin sentences, and finished translations of selected passages from the Latin. These courses in Latin fulfill the requirements of college entrance examinations.

Latin 1. Exercises in translations, English-Latin, Latin-English. Drill in Latin forms, drill in Latin syntax. The course aims to give the student a thorough knowledge of the fundamental principles of Latin syntax.

Latin 2. The Latin reading is not less in amount than Caesar, Gallic War, I-IV. This amount of reading is taken from Caesar (Gallic War and Civil War), Nepos (Lives), Aulus Gellius, Eutropius, Phaedrus, Quintus Curtius Rufus, and Valerius Maximus, or books of selections containing some of these with other authors of prose works. Special attention is given to sight translation, to vocabulary study, to the Latin Word List, which contains those words the student is expected to know at the end of two years of the study of Latin. There is continued drill in Latin syntax and in Latin forms. This course in second year Latin aims to meet the needs of those students who plan to enter colleges that require only two years of Latin.

French

The courses in French are planned with the purpose of giving the students (1) an appreciative comprehension of French, both as literature and as a spoken language; and (2) a sufficient knowledge to fit them for advanced work. The essentials of the grammar are mastered by continued drill and constant application. The attainment of good pronunciation receives careful attention, and from the beginning the student is trained to understand spoken French.

French 1. This course begins with instruction in pronunciation. Phonetic symbols are not used. The acquisition of a basic vocabulary is stressed and the memorizing of word groups and short sentences.

The instruction in grammar consists of the elementary forms and uses of articles, nouns, adjectives, pronouns, adverbs, regular verbs, and a few common irregular verbs. Much emphasis is placed upon written translation of English into French.

The reading text provides for the translation of at least fifty pages of simple French. This is largely oral translation.

French 2. This course completes the elements of grammar and syntax, with special emphasis upon forms and practice in their use in written composition. Frequent review lessons help to make the student familiar with the essentials.

French 3. The Bové revision of Carnahan's "Short French Review Grammar" is used and provides a general review and further advance in grammar and in written translation of connected prose with special emphasis on constructions involving the use of verbs and pronouns. Labiche's *Voyage de M. Perrichon* is the reader for the course.

German

At the end of the elementary course in German, the student should be able to read at sight and to translate a passage of easy German prose. He should be able to put into German, short English sentences taken from the language of everyday life, and to answer questions upon principles of German grammar. The course aims to meet the needs not only of those students who are seeking a general knowledge of German, but also of those students who are planning to take the college entrance examinations.

German 1. Vos "Essentials of German" is used as a grammar and composition book. Drill in pronunciation; practice in reading the German text aloud; composition; translation; study of verbs and idioms. An elementary German reader is used.

German 2. Cochran's "A Practical German Review Grammar" is used as a textbook. A review of the work of German 1 is followed by further study of grammar, with emphasis on verbs, idioms, the accumulation of a practical vocabulary, and conversation. A second year reader is the basis for practice in conversation, vocabulary building, and reading for comprehension.

Spanish

Spanish 1. The work of the first year is planned to cover the requirements of elementary Spanish as given in high school. It serves as a complete unit in fundamentals for the student who wishes to continue the language independently by study, travel, or reading. Correct pronunciation, a knowledge of the grammatical structure of the language, and an ability to read and write within the limits of a practical vocabulary are the goals of the course. Standard elementary readers are used in connection with a grammar text such as Hills and Ford "First Spanish Course."

Spanish 2. After a rapid review of the work covered by Spanish 1, the second year is devoted to a further study of grammar, the enlargement of vocabulary, including common idioms, and the increase of skill and speed in translation and conversation. The course prepares for the elementary examination in Spanish given by the College Entrance Examination Board. The use of a standard grammar is supplemented by reading of current as well as classical Spanish.

History, Government, Economics

The aim of the department is to give a broad knowledge of vital conditions in the growth of the leading countries of the world. This includes the study not only of important historical facts, but more especially of the progress of development in government, society, business, religion, and education. The past is studied that the present may be better understood.

History (United States). It is the purpose of the course to attempt to understand the present social, political and economic problems in the light of those similar problems of the past. A brief survey of the origin and purpose of the Constitution; the rise of Nationalism; the birth of Sectionalism which precipitated the war between the states is stressed as a background for the problems arising out of the conflict. The story of the new industrial nation with its vast and growing demands of capital, labor and agriculture is given special attention. National development in its relation to international affairs is emphasized both before and following World Wars I and II. Modern social trends in a moving world are studied and evaluated. Throughout the course a continuous over-all picture is being developed on the basis of the above historical movements.

History (European). In this course a study is made of the European powers from the beginning of the seventeenth century to the present. Autocracy rampant in the seventeenth and eighteenth centuries begins to decline in the latter eighteenth century with the French Revolution. The decline continued in the nineteenth century, giving way to democracy, which reached its peak following the World War, only to yield in many countries to dictatorships of the present day. International relations are traced, noting especially the influence of commerce and the subsequent imperial rivalries and wars. The Industrial Revolution, with its profound effect upon humanity, forms another important part of the course. Considerable stress is given to great leaders of the different European powers. Events leading up to World War II are discussed and the social, economic, and political repercussions as a result of the war are studied.

History (Ancient). This course covers a brief account of development of the early civilizations of the eastern Mediterranean area and the Tigris-Euphrates Valley. An intensive study is made of the Greek and Roman civilizations with special reference to the culture of each. The course also includes a brief study of the Germanic invasions, the rise and early growth and recognition of Christianity; the rise and development of Mohammedanism; the growth of the Papacy and monasticism; and the Empire of Charlemagne. The course covers the requirements of the College Entrance Examination Board.

Government. The first semester consists essentially of a detailed study of the Constitution of the United States, noting carefully the functions and importance of the executive, legislative, and judicial branches. A less detailed study is made of state and local government.

During the second semester a study of Latin American countries is undertaken with special attention to our "Good Neighbor Policy." Then follows a study of European countries with a view of promoting a better understanding of their governments, systems of economics, and social problems to the end that international goodwill may be furthered.

Problems in Democracy. This course is a study of the more common problems that face American Democracy in the world today. The approach is historical and factual. The treatment is functional. Political, social, cultural, and economic aspects of civilization are included. Some of the subjects are government and business; international trade and tariffs; markets and marketing problems; labor and government; big business and labor; collective bargaining; consumption and standards of living; national resources, their use and conservation; social security; human conservation; public health and security; government, federal, state, and local; political parties; propaganda and public opinion; national defense and international problems; diplomacy; world peace; regional defense agreements; modern national ideologies such as fascism and communism; United States, a world power; good neighbor policy; reciprocal tariffs and other related matters. The course is an introduction to the overall study of many national problems in the world today.

Economics. A careful study is made of the origin and development of our industrial system, and an analysis into its component parts, together with the economic phenomena accompanying them. It is intended to make economics of practical value in everyday life.

During the second semester the course embraces the reform and improvement of our industrial system; taxation, the tariff, international trade, transportation, labor and capital, public ownership, wages and profits, and other current economic problems are treated.

Mathematics

The courses in mathematics are planned to meet the needs of all secondary students. They afford an opportunity for preparation in the mathematical processes which are necessary for success in industrial, commercial, or professional careers. They are intended (1) to acquaint the student with such mathematical processes and methods as he is most likely to need in the successful pursuit of other studies and in the various trades and occupations; (2) to prepare the student for the successful pursuit of the more advanced branches of mathematics in technical schools and colleges.

General Mathematics. This course gives a complete review of the four fundamental operations of arithmetic; complete work on fractions; mastery of percentage problems of many types; introduction to Algebra and Geometry and the study of the graph. It is full of problems from the many phases of life.

Algebra 1. This course introduces the student to: (1) the positive and the negative number; to its application in the four fundamental operations leading up to the solving of formulas and equations, both linear and fractional, in one and two unknowns; (2) the function of the graph for both pictorial representation and the solving of equations; (3) the literal number and the study of problems.

Algebra 2. Review of Elementary Algebra with more difficult problems. Quadratics and simultaneous quadratic equations, with applications, ratio, proportion, and variation, progressions, binomial theorem, logarithms, and that part of Trigonometry required by the College Entrance Examination Board.

Geometry, Plane. The five books of Plane Geometry are studied. The numerous original exercises stimulate the power to reason clearly and to derive logical proofs. Special attention is given to those who expect to take college entrance examinations. This course meets College Entrance Board requirements.

Geometry, Solid. This course deals with appreciation of three dimensional relations, formal proofs of the standard theorems and originals, locus problems, properties and measurement of prisms, pyramids, cylinders, cones and the sphere.

Trigonometry. The major topics covered by this course are the theory and use of logarithms, solution of right and oblique triangles, trigonometric equations, proofs of fundamental formulas and identities based upon them, radian measure.

Science

Biology. This is a comprehensive course in Biology designed to meet the requirements of the following persons: (1) prospective college students who are preparing for college entrance and College Board Examinations; (2) students who plan to enter institutions requiring credits in some science; (3) prospective nursing students; (4) those who desire an elementary knowledge of the structure and function of plant and animal life.

The multiple objectives of the course are: to gain the best approach to an understanding of facts, principles, and theories and to apply them in various ways; to help the student to develop a special interest in some part of the course; to give a fundamental understanding of living things, of their structure and function; to give a survey of the plant and animal kingdoms with the primary objective of creating interest in and appreciation of nature; to present the economic aspects of Biology; to present an adequate understanding of hygienic principles underlying all healthful living organisms; to meet the requirements of an elementary course in any life science which aims to contribute to both avocational and vocational training.

The course consists of lectures, demonstrations, discussions, motion pictures, and laboratory work.

Physics. This course is intended for two groups of students. First, it will meet the requirements of those expecting to enter a college or technical school. Secondly, it is intended to help those who wish a general knowledge of the important laws and principles of Physics as applied to modern everyday experiences. The applica-

tions of Physics in such fields as household appliances, the weather, the automobile, the airplane, radio, etc., are particularly stressed with the idea of giving a background of culture and enjoyment.

Many students interested in mechanical lines will find it giving them a clearer understanding of the operations of devices of which they make constant use.

Laboratory experiments and lecture table demonstrations will illustrate the subject matter studied in the text.

Although the course is not intended to be highly theoretical, an elementary knowledge of Algebra and Geometry will be of assistance in the solution of problems.

Chemistry. This course has the twofold aim of preparing the student in Chemistry for entrance to any college or technical school and providing a general introduction to the subject for other purposes.

There are class discussions of chemical principles and of chemical materials, solution of numerical problems, practice in such exercises as writing of equations, demonstration experiments carried through by the instructor. The student does assigned experiments in the laboratory and writes reports of his work.

The more important elements, both non-metallic and metallic, as well as numerous compounds, are studied. Important laws and hypotheses of Chemistry are constantly stressed.

Unless there is urgent reason for following a different order, the student is advised to arrange his succession of courses in such a way that Chemistry will be preceded by a study of Physics.

THE LINCOLN PREPARATORY SCHOOL

360 Huntington Avenue, Boston 15, Mass.

Application for Admission

Application Received by Date 19..

A fee of five dollars must accompany this application. Make checks, money orders, or drafts payable to the Lincoln Preparatory School

This fee is not refundable

.....
(date)

To the Headmaster:

I,
(First Name) (Middle Name) (Last Name)
hereby apply for admission to the Lincoln Preparatory School, and submit the following information:

.....
(Street Address)

.....
(Town)

Age Date of Birth

Citizen of U.S. Yes ☐ No ☐

Home Telephone

Business Address
(Concern) (Street) (City)

Business Telephone Occupation

List other high schools attended (State whether day or evening)

Name of School	Approximate Date of Attendance	Day or Evening

Do you wish to receive the diploma of this school?

Do you merely wish to earn credits here without qualifying for the diploma?

Do you plan to enter college?

If so, which college?

If under 21, give name of parent or guardian

.....
(Signature)

THE LINCOLN SCHOOLS

Evening Sessions

CLASSES OPEN TO MEN AND WOMEN

LINCOLN TECHNICAL INSTITUTE

Associate in Engineering Programs

Courses leading to the Degree of Associate in Engineering are offered in the following major fields:

CHEMISTRY

ELECTRICAL

INDUSTRIAL

CIVIL-STRUCTURAL

ELECTRONICS

MECHANICAL

B.B.A. Degree Program

A six-year program conducted in conjunction with Northeastern University School of Business is available which leads to the degree of B.B.A. in Engineering and Management awarded by Northeastern University.

Special Programs

For those who do not wish to take one of the regular programs, special programs consisting of one or more courses can be arranged to meet individual needs.

LINCOLN PREPARATORY SCHOOL

Individual High School subjects to meet particular needs, or leading to a Diploma, are available.

Students may enter in September, January, and June.

For further information write, indicating the school in which you are interested

THE LINCOLN SCHOOLS

360 HUNTINGTON AVENUE, BOSTON 15, MASSACHUSETTS

Telephone: COpley 7-5252

WELLS BINDERY
WALTHAM, MASS.
SEPT. 1952

